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S. HRG. 101-509

FASTENER QUALITY ACT

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

H.R. 3000

TO REQUIRE THAT CERTAIN FASTENERS SOLD IN COMMERCE CONFORM TO THE SPECIFICATIONS TO WHICH THEY ARE REPRESENTED TO BE MANUFACTURED, TO PROVIDE FOR ACCREDITATION OF LABORATORIES ENGAGED IN FASTENER TESTING, TO REQUIRE INSPECTION, TESTING, AND CERTIFICATION, IN ACCORDANCE WITH STANDARDIZED METHODS, OF FASTENERS USED IN CRITICAL APPLICATIONS TO INCREASE FASTENER QUALITY AND REDUCE THE DANGER OF FASTENER FAILURE, AND FOR OTHER PURPOSES

NOVEMBER 20, 1989

Printed for the use of the
Committee on Commerce, Science, and Transportation

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THE FASTENER QUALITY ACT

MONDAY, NOVEMBER 20, 1989

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The committee met, pursuant to notice, at 10:02 a.m., in room SR-253, Russell Senate Office Building, Hon. Albert Gore, Jr., presiding.

Staff members assigned to this hearing: Pat Windham, professional staff member; Loretta Dunn, staff counsel; and Fiona Branton, minority staff counsel.

OPENING STATEMENT BY SENATOR GORE

Senator GORE. The committee will come to order. I would like to welcome our witnesses and guests. Congressman Dingell, who is going to be our lead-off witness, has been delayed in the meetings of a conference committee which committee is deciding the fate of the republic at this very moment, and when he arrives we will interrupt our proceedings and give him an opportunity to make his statement out of the normal order.

As a former member of the House Committee on Energy and Commerce, I am accustomed already to accommodating Congressman Dingell and his schedule.

Let me make a brief opening statement and then we will start with our first panel.

This hearing is on H.R. 3000, the proposed Fastener Quality Act. It is a bill to improve the testing and traceability of bolts and other fasteners used in critical applications such as aircraft, the space shuttle, military equipment of all kinds, trucks, buildings, and nuclear power plants.

Over the past several years the House Committee on Energy and Commerce has conducted an in-depth investigation of the threats posed by substandard and counterfeit fasteners. What that committee and the media have found is quite disturbing. Several people have died in crashes involving private planes caused by defective fasteners.

NASA found allegedly counterfeit bolts in the space shuttle Discovery just before its successful 1988 launch in September of 1988. At one point 1,200 of the Army's M-60 guns were removed from service for several months while defective bolts in the gun mounts were replaced.

My own home state of Tennessee was the scene of one of the most tragic recent incidents with defective fasteners. Several days before Christmas 1987, construction worker Calvin Davis fell to his

death when a bolt he was tightening suddenly broke. Mr. Davis was an ironworker, helping to build General Motors' new Saturn assembly plant in Spring Hill, Tennessee.

According to a House Energy Committee report, Mr. Davis' union had the bolt tested and found it to be substandard, not the high quality bolt Mr. Davis' company believed it had bought.

Clearly one part of government's response to this problem must be to step up investigations and prosecutions of those individuals and companies who wilfully and fraudulently sell substandard or counterfeit parts. These prosecutions have begun.

NASA, which is represented here today by the agency's Inspector General, has become very active in tracking down fraud causes. The Defense Department has also begun to tackle those problems.

Congressman John Dingell and many of his House colleagues believe that the government must also take a second step and establish a more rigorous process for testing and tracing fasteners to ensure that they perform as promised.

Chairman Dingell's Energy and Commerce Committee joined by Chairman Bob Roe's Committee on Science, Space, and Technology recently wrote up H.R. 3000, a bill that would first require certain high strength fasteners to be tested and certified before sale and, second, would direct the Secretary of Commerce to establish a program to accredit the private laboratories that would perform the tests.

H.R. 3000 has already passed the House and is now pending before this committee. Both Chairman Hollings and I consider this bill to be high priority legislation. It is most unusual to have a legislative hearing this late in the session, but we are doing it because we assign such a high priority to this bill.

I have an opening statement that the Chairman, Senator Hollings would like to have included in the record.

[The statement and bill follow:]

OPENING STATEMENT BY THE CHAIRMAN

Over the past few years, our House colleagues have conducted a thorough investigation of the dangerous practice of using substandard bolts and other fasteners in such critical applications as the space shuttle, military equipment, and buildings. The safety risks are real; several people already have lost their lives.

Clearly, part of the solution to this problem is to step up criminal investigations and prosecutions, and Federal agencies and U.S. attorneys have begun to do so. House leaders also believe more testing and detailed paperwork to improve the "traceability" of fasteners would further deter a wrong-doer from selling inferior bolts. To require this testing they have written H.R. 3000, the proposed Fastener Quality Act.

This morning the Commerce Committee will examine this bill and this important safety issue. I am pleased that we have scheduled this hearing. We have excellent witnesses this morning, and I look forward to hearing their testimony.

101ST CONGRESS
1ST SESSION

H. R. 3000

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 20 (legislative day, SEPTEMBER 18), 1989
Received; read twice and referred to the Committee on Commerce, Science, and Transportation

AN ACT

To require that certain fasteners sold in commerce conform to the specifications to which they are represented to be manufactured, to provide for accreditation of laboratories engaged in fastener testing, to require inspection, testing, and certification, in accordance with standardized methods, of fasteners used in critical applications to increase fastener quality and reduce the danger of fastener failure, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Fastener Quality Act".

SEC. 2. FINDINGS.

The Congress finds that—

(1) the American economy uses billions of fasteners each year,

(2) millions of mismarked, substandard, counterfeit, and other nonconforming fasteners have been sold in commerce to end users in the United States, and their use has dramatically increased the risk of equipment and infrastructure failures,

(3) both the military and civilian sectors of the economy have encountered unnecessary, unwarranted, and dangerous equipment and construction failures, as well as extraordinary expenses, as a result of the use of nonconforming fasteners,

(4) the sale in commerce of nonconforming fasteners and their use in numerous critical applications have reduced the combat readiness of the Nation's military forces, endangered the safety of other Federal projects and activities, and cost both the public and private sectors incalculable sums in connection with the retesting and purging of fastener inventories,

(5) the purchase and use of nonconforming fasteners stem from material misrepresentations about such fasteners made by certain manufacturers and distributors engaged in commerce,

(6) most of the nonconforming fasteners were produced abroad and imported by certain American importing companies that know or should know that the products do not conform to the published standards and specifications to which the manufacturer represents the products have been manufactured or to which the products were ordered,

(7) current fastener standards of measurement evaluate bolts and other fasteners according to multiple criteria including strength, hardness, and composition, and provide grade identification markings on fasteners to make the characteristics of individual fasteners clear to purchasers and users,

(8) current tests required by consensus standards, designed to ensure fasteners are of standard measure, are adequate and appropriate for use as standards in a program of high strength fastener testing,

(9) the lack of traceability by lot number of fasteners sold in commerce is a serious impediment to effective quality control efforts, and

(10) the health and safety of Americans is threatened by the widespread sale in commerce of mismarked, substandard, and counterfeit fasteners, a practice which also harms American manufacturers, import-

ers, and distributors of safe and conforming fasteners, and workers in the American fastener industry.

SEC. 3. TESTING AND CERTIFICATION OF FASTENERS.

(a) REQUIREMENT.—

(1) GENERAL RULE.—No fastener shall be offered for sale or sold in commerce unless it is part of a lot which—

(A) conforms to the standards and specifications to which the manufacturer represents it has been manufactured, and

(B) has been inspected, tested, and certified as provided in subsections (b) and (c).

(2) SMALL LOT EXCEPTION.—(A) Paragraph (1)(B) shall not apply to fasteners which are part of a lot of 50 fasteners or less if—

(i) inspection, testing, and certification as provided in subsections (b) and (c) is carried out, and

(ii) written notice is sent to all purchasers of the fastener, except for retail sellers and retail consumers, detailing the results of such inspection, testing, and certification,

as soon as practicable after sale.

(B) If a fastener is sold under this paragraph, each purchaser of such fastener, except for retail sell-

ers and retail consumers, shall be provided with written notice stating that such fastener has not yet been inspected, tested, and certified as required by this Act.

(b) INSPECTION AND TESTING.—

(1) GENERAL RULE.—The manufacturer of a lot shall cause to be inspected and tested a sample of the fasteners in such lot to determine whether the lot conforms to the standards and specifications to which the manufacturer represents it has been manufactured. Such inspection and testing shall be performed by a laboratory accredited as provided under this Act. The standards and specifications to which the manufacturer represents such lot has been manufactured shall be disclosed by the manufacturer to the laboratory at the time the lot is submitted for inspection and testing under this paragraph. The manufacturer of a lot may perform the inspection and testing required by this paragraph in a laboratory which it owns or with which it is otherwise affiliated, if such laboratory is accredited as provided under this Act.

(2) SAMPLE.—The size, selection, and integrity of the sample to be inspected and tested under paragraph (1) shall be governed by the standards and specifications to which the manufacturer represents the fasteners in the sample have been manufactured, or, if such

standards and specifications do not provide for the size, selection, or integrity of the sample, by an appropriate sample plan then published by a consensus standards organization, as the Secretary may determine from time to time. Nothing in this paragraph shall prohibit a purchaser from requiring the inspection and testing of a greater number of fasteners from a lot than is specified in the applicable standards and specifications or in the applicable sample plan.

(c) CERTIFICATION.—If a laboratory performing the inspection and testing under subsection (b)(1) determines, based on the sample examined, that a lot conforms to the standards and specifications to which the manufacturer represents it has been manufactured, the laboratory shall provide to the manufacturer certificates with respect to such lot, in a form to be prescribed by the Secretary by regulation—

(1) stating the manufacturer's name and the lot number,

(2) referencing the standards and specifications disclosed by the manufacturer with respect to such lot under subsection (b)(1) or, where applicable, section 5(c)(1),

(3) listing the chemical, dimensional, physical, mechanical, and other significant characteristics and markings required by the standards and specifications

described in paragraph (2) and those revealed by the inspection and testing under subsection (b)(1),

(4) stating whether the lot has been found after such inspection and testing to conform to such standards and specifications, and

(5) bearing the original signature of a laboratory employee or officer determined by the Secretary to be responsible for the accuracy of the certificate and of the inspection and testing to which it relates.

SEC. 4. LABORATORY ACCREDITATION.

(a) ESTABLISHMENT OF ACCREDITATION PROGRAM.—(1) Within 180 days after the date of enactment of this Act, the Secretary, acting through the Director of the National Institute of Standards and Technology (hereafter in this Act referred to as the "Director") shall—

(A) establish a program for the accreditation of laboratories engaged in the inspection and testing of fasteners under section 3,

(B) publish a notice in the Federal Register stating that the National Institute of Standards and Technology is prepared to accept applications for accreditation of such laboratories,

(C) establish conditions under which the accreditation of laboratories by private entities using standards issued by consensus standards organizations shall be

deemed to satisfy the laboratory accreditation requirements of this Act, and

(D) establish conditions, no less stringent than those established under subparagraph (C), under which the accreditation of foreign laboratories by their governments shall be deemed to satisfy the laboratory accreditation requirements of this Act.

(2) No accreditation under this subsection shall be effective for a period of greater than 3 years.

(b) LABORATORY ACCREDITATION STANDARDS.—(1) Laboratory accreditation standards issued by one or more consensus standards organizations selected by the Director shall be used to accredit laboratories under the accreditation program established under subsection (a). The Director shall, within 60 days after the date of enactment of this Act, publish notice in the Federal Register indicating which consensus standards organizations' standards will be adopted in connection with such program.

(2)(A) The Director may adopt other laboratory accreditation standards developed by consensus standards organizations in addition to those adopted as described in paragraph (1), and may delete standards adopted as described in this subsection, as appropriate.

(B) The Director shall publish notice in the Federal Register indicating any adoption or deletion of standards under subparagraph (A).

(3) A laboratory accredited under a standard adopted as described in this subsection that is subsequently deleted under paragraph (2) may continue to test fasteners and issue certificates as provided by this Act until the expiration of the period for which the laboratory was accredited.

(c) OPERATION OF LABORATORY ACCREDITATION PROGRAM.—(1) The Director may hire such contractors as are necessary to carry out the accreditation program established under subsection (a).

(2) Costs to the National Institute of Standards and Technology and to the Secretary for the establishment and operation of the accreditation program under this section shall be fully reimbursable to the National Institute of Standards and Technology or to the Secretary, as appropriate, through fees or other charges for accreditation services under such program.

(d) ENSURING COMPLIANCE.—The Secretary shall ensure that—

(1) private entities accrediting laboratories under conditions established under subsection (a)(1)(C) comply with such conditions, and

(2) laboratories accredited by such private entities, or by foreign governments pursuant to subsection (a)(1)(D), comply with the requirements for such accreditation.

The Secretary may require any such private entity or laboratory to provide all records and materials that may be necessary to allow the Secretary to carry out this subsection.

(e) RECOMMENDATIONS TO CONSENSUS STANDARDS ORGANIZATIONS.—The Director shall periodically transmit to appropriate consensus standards organizations any information or recommendations that may be useful in the establishment or application by such organizations of standards or specifications for fasteners.

SEC. 5. SALE OF FASTENERS SUBSEQUENT TO MANUFACTURE.

(a) DOMESTICALLY PRODUCED FASTENERS.—It shall be unlawful for a manufacturer to sell any container of fasteners which are manufactured in the United States unless delivery of such container to the purchaser is accompanied by a written notification that the fasteners have been tested and certified by a laboratory accredited as provided in this Act.

(b) FASTENERS OF FOREIGN ORIGIN.—It shall be unlawful—

(1) for any person to sell to any importer, and

(2) for any importer to purchase,

any container of fasteners which are manufactured outside the United States unless delivery of such container to such importer is accompanied by an original certificate provided by a laboratory under section 3(c) with respect to the lot from which such fasteners were taken.

(c) OPTION FOR IMPORTERS AND PRIVATE LABEL DISTRIBUTORS.—Notwithstanding section 3(a) and subsections (a) and (b) of this section, delivery of a lot or portion may be made to an importer or private label distributor without the required certificate if—

(1) the manufacturer discloses to the importer or private label distributor in writing the standards and specifications to which the manufacturer represents the lot or portion has been manufactured, and

(2) the importer or private label distributor assumes responsibility in writing for the inspection and testing of such lot or portion.

If the importer or private label distributor assumes the responsibility in writing for the inspection and testing of such lot or portion, the importer or private label distributor shall be deemed for purposes of section 3(a) and subsections (a) and (b) of this section to be a manufacturer, except that the importer or private label distributor shall provide to the laboratory described in section 3(b)(1) the manufacturer's written disclosure made under paragraph (1) of this subsection.

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(d) SUBSEQUENT PURCHASERS.—It shall be unlawful for any person to sell any quantity of fasteners to any person who purchases such fasteners for resale at wholesale unless the container is conspicuously marked with the number of the lot from which such fasteners were taken.

(e) ALTERATIONS SUBSEQUENT TO MANUFACTURE.—

(1) GENERAL RULE.—Any person who significantly alters a fastener so that such fastener no longer conforms to the description in the relevant certificate issued under section 3(c), and who thereafter offers for sale or sells such altered fastener shall be deemed a manufacturer for purposes of this Act and shall cause such altered fastener to be inspected and tested under section 3 or this section as though it was newly manufactured, unless delivery of such fastener to the purchaser is accompanied by a written statement disclosing the subsequent alteration and warning that such alteration may affect the dimensional or physical characteristics of the fastener.

(2) SUBSEQUENT DISCLOSURES.—Any person who sells an altered fastener and who did not alter such fastener shall provide to the purchaser a copy of the statement required by paragraph (1), except that such statement need not be provided to retail sellers or retail consumers.

(f) COMMINGLING PROHIBITED.—It shall be unlawful for any manufacturer or any person who purchases any quantity of fasteners for resale at wholesale to commingle fasteners from different lots in the same container.

SEC. 6. MANUFACTURERS' INSIGNIAS.

(a) GENERAL RULE.—No fastener which is required by the standards and specifications to which it was manufactured to bear a raised or depressed insignia identifying its manufacturer or private label distributor shall be offered for sale or sold in commerce unless the manufacturer or private label distributor of such fastener has complied with the requirements prescribed by the Secretary in connection with the program established under subsection (b).

(b) RECORDATION.—The Secretary shall establish, by regulation, a program to provide for the recordation of the insignias of manufacturers and private label distributors described in subsection (a), to ensure the traceability of a fastener to its manufacturer or private label distributor.

SEC. 7. REMEDIES AND PENALTIES.

(a) CIVIL REMEDIES.—(1) The Attorney General may bring an action in an appropriate United States district court for appropriate declaratory and injunctive relief against any person who violates this Act.

(2) An action under paragraph (1) may not be brought more than 10 years after the date on which the cause of action accrues.

(b) CRIMINAL PENALTIES.—(1) Whoever knowingly certifies, marks, offers for sale, or sells a fastener in violation of this Act shall be fined under title 18, United States Code, or imprisoned not more than 5 years, or both.

(2) Whoever knowingly engages in any conduct and thereby fails to maintain records relating to a fastener in violation of this Act shall be fined under title 18, United States Code, or imprisoned not more than 5 years, or both.

(3) Whoever knowingly engages in any conduct and thereby negligently fails to maintain records relating to a fastener in violation of this Act shall be fined under title 18, United States Code, or imprisoned not more than 2 years, or both.

SEC. 8. RECORDKEEPING REQUIREMENTS.

(a) LABORATORIES.—Laboratories which perform inspections and testing under section 3(b) shall retain for 7 years all records concerning the testing and certification of fasteners under section 3.

(b) MANUFACTURERS, IMPORTERS, PRIVATE LABEL DISTRIBUTORS.—Manufacturers, importers, and private label distributors shall retain for 7 years all records concerning the testing and certification of fasteners under section 3,

and shall provide a copy of any such certificate upon request to any subsequent purchaser of fasteners taken from the lot to which such certificate relates.

SEC. 9. RELATIONSHIP TO STATE LAWS.

Nothing in this Act shall be construed to preempt any rights or causes of action that any buyer may have with respect to any seller of fasteners under the law of any State, except to the extent that the provisions of this Act are in conflict with such State law.

SEC. 10. CONSTRUCTION.

Nothing in this Act shall be construed to limit or otherwise affect the authority of any consensus standards organization to establish, modify, or withdraw any standards and specifications under any other law or authority in effect on the date of the enactment of this Act.

SEC. 11. REGULATIONS.

The Secretary shall within 180 days after the date of enactment of this Act issue such regulations as may be necessary to implement this Act.

SEC. 12. DEFINITIONS.

(a) DEFINITIONS.—As used in this Act—

(1) the term "alter" means to alter by—

(A) through-hardening by heat treatment,

(B) electroplating of fasteners having a tensile strength of 150,000 pounds per square inch or higher, or

(C) machining,

(2) the term "consensus standards organization" means the American Society for Testing and Materials, American National Standards Institute, American Society of Mechanical Engineers, Industrial Fastener Institute, Society of Automotive Engineers, or any other standard-setting organization determined by the Secretary to have comparable knowledge, expertise, and concern for health and safety in the field for which such organization purports to set standards,

(3) the term "container" means any package of fasteners traded in commerce,

(4) the term "fastener" means—

(A) a—

(i) screw, nut, bolt, or stud having internal or external threads, or

(ii) flat washer commonly used to perform a load indicating function,

with a nominal diameter of 5 millimeters or greater, in the case of such items described in metric terms, or 1/4 inch or greater, in the case of such items described in terms of the English system of

measurement, which contains any quantity of metal and has been through-hardened, or

(B) except as provided in subsection (b), a screw, nut, bolt, or stud having internal or external threads which bears a grade identification marking required by a standard or specification,

(5) the term "grade identification marking" means any symbol appearing on a fastener purporting to indicate that the fastener's base material, strength properties, or performance capabilities conform to a specific standard of a consensus standards organization or other person,

(6) the term "importer" means a person located within the United States who contracts for the initial purchase of fasteners manufactured outside the United States for resale or such person's use within the United States,

(7) the term "lot" means a quantity of fasteners of one part number fabricated by the same production process from the same coil or heat number and submitted for inspection and testing at one time,

(8) the term "manufacturer" means a person who fabricates fasteners, or who alters any item so that it becomes a fastener,

(9) the term "private label distributor" means a person who contracts with a manufacturer for the fabrication of fasteners bearing the distributor's distinguishing insignia,

(10) the term "Secretary" means the Secretary of Commerce or his designee, and

(11) the term "standards and specifications" means the provisions of a document published by a consensus standards organization, a government agency, or a major end user of fasteners which defines or describes dimensional characteristics, limits of size, acceptable materials, processing, functional behavior, plating, baking, testing, and required markings of any fastener.

(b) SPECIAL RULES FOR FASTENERS.—(1) If standards and specifications are changed to require an additional category of fasteners to bear a grade identification marking, the Secretary shall determine whether such additional category of fasteners are used in critical applications, and only if they are so used shall such category be considered fasteners subject to the requirements of this Act.

(2) If the Secretary determines that an additional category of fasteners not currently required by a standard or specification to bear a grade identification marking, and not otherwise defined as a fastener under this Act, is used in

critical applications, items in such category shall be considered fasteners subject to the requirements of this Act.

SEC. 13. EFFECTIVE DATE.

The requirements of this Act shall be applicable only to fasteners fabricated 180 days or more after the Secretary issues final regulations required under sections 3, 4, and 6, except that the Secretary may extend such time period if the Secretary determines that an insufficient number of laboratories have been accredited to perform the volume of testing required. Upon any such extension, and every 6 months thereafter during such extension, the Secretary shall submit a report to the Congress explaining the reasons for such extension and the steps being taken to ensure the accreditation of a sufficient number of laboratories.

Passed the House of Representatives September 19, 1989.

Attest: DONNALD K. ANDERSON,

Clerk.

Senate GORE. For today's hearing we invited both of the distinguished House Chairmen who are the co-authors of H.R. 3000, and the press of business during the final week of the session may, as I said earlier, delay Congressman Dingell and may prevent Chairman Roe from joining us this morning, but we are delighted to have a roster of distinguished witnesses.

Our first panel is made up of two government witnesses, one from the National Institute of Standards and Technology, which would administer the bill's laboratory accreditation program, and one witness from NASA.

We will then hear from witnesses representing the four main parts of the fastener industry, domestic manufacturers, importers, distributors, and users. In the process we will examine whether or not any parts of the bill need to be fine-tuned. We would not want it put together with any defective legislative fasteners here, and I want to thank all of our witnesses for coming, especially on fairly short notice. You are all welcome, and we look forward to your testimony.

Without any further ado, let me ask our first two witnesses to come forward, Mr. Raymond G. Kammer, Acting Director of NIST, the National Institute of Standards and Technology in Gaithersburg, and Mr. Bill Colvin, Inspector General with NASA, National Aeronautics and Space Administration based in Washington.

And let me say that without objection your prepared statements will be included in the record in full. You are invited to proceed with a summary. And, Mr. Kammer, you are accompanied by——

Mr. KAMMER. Dr. Stan Warshaw, who is the Associate Director for Industry and Standards at NIST.

Senator GORE. You are most welcome also. We will take you in the order in which you were introduced. That means, Mr. Kammer, you are invited to go first.

STATEMENT OF RAYMOND G. KAMMER, ACTING DIRECTOR, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, DEPARTMENT OF COMMERCE, ACCOMPANIED BY DR. STANLEY WARSHAW, ASSOCIATE DIRECTOR FOR INDUSTRY AND STANDARDS

Mr. KAMMER. Thank you, sir. I am here to summarize the views of the administration with respect to the House-passed bill H.R. 3000, the Fastener Quality Act.

We believe the problem of counterfeit and substandard fasteners could be resolved without legislation. However, I am authorized to say that the administration would not object to a bill along the lines of H.R. 3000 because it is generally consistent with the existing NIST programs with one exception, and that is that we recommend that the bill be modified to avoid placing NIST in a regulatory role over the private standards community.

This can be done by deleting the requirement contained in section 4(a)(1)(c) that NIST accredit private entities which would, in turn, accredit laboratories that perform the tests on fasteners.

We recommend against requiring NIST to certify laboratory accreditation by private entities for three basic reasons. First of all, allowing private entities in the name of the government to make

regulatory decisions tends to, we believe, put a question mark on a lot of NIST activities.

Second, it is possible that it is going to create a conflict with actions that the government is apt to need to take to allow U.S. industry to comply with EC 92 requirements in the standards areas.

In EC 92 test methods will be the critical issue and showing your compliance with them will be a necessary condition of selling in Europe. And we do not know quite the procedures for that yet, and one would like not to anticipate them in legislation until they are well thought through. The EC has not yet fully promulgated their requirements. And then, third, putting NIST in the position of being a regulator of what other private standards-type bodies can do will tend to change our relationship with the standards bodies. So, for those three reasons we would recommend the deletion or change of the section that I alluded to earlier.

As I said earlier, the administration is not convinced that legislation is absolutely necessary to resolve the fastener problem namely because two other programs exist. They are the National Voluntary Laboratory Accreditation Program at NIST and a private sector certification program now being developed by ASME, the American Society of Mechanical Engineers.

ASME has been working to develop a certification program and has in the development of this program secured input from major industrial fastener users such as Boeing and General Motors, government personnel from the Department of Defense and the NRC and also from the Industrial Fastener Institute which you will hear from a little later today. ASME currently plans to implement the program in the spring of 1990.

The other approach is the National Voluntary Laboratory Accreditation Program, which has cooperated with the private sector to evaluate more than 900 laboratories in 12 different product areas, and these include computer protocols, carpets, radiation dosimeters and asbestos abatement.

An accreditation program for laboratories that test special purpose fasteners could readily be established in NVLAP without the need for there to be legislation. Thank you, sir. I would be happy to address any questions you have.

[The statement follows:]

UNITED STATES
DEPARTMENT OF COMMERCE
NATIONAL INSTITUTE OF STANDARDS
AND TECHNOLOGY

STATEMENT OF RAYMOND G. KAMMER, ACTING DIRECTOR

BEFORE THE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION

UNITED STATES SENATE

ON THE FASTENER QUALITY ACT

NOVEMBER 20, 1989

Mr. Chairman and Members of the Subcommittee:

I am Ray Kammer, Acting Director of the National Institute of Standards and Technology (NIST). With me today is Dr. Stanley Warshaw, Associate Director for Industry and Standards at NIST. I am here to summarize the views of the Administration with regard to the House-passed bill H.R. 3000, the Fastener Quality Act.

We believe that the problem of counterfeit and sub-standard fasteners can be resolved without legislation. However, the Administration would not object to a bill along the lines of H.R. 3000 because it is generally consistent with use of existing NIST programs. However, the bill needs to be modified to ensure that it would not place NIST in a regulatory role over the private standards community. Specifically, the bill should be modified by deleting the requirement contained in Section 4 (a)(1)(C) that NIST accredit private entities which would in turn accredit laboratories that perform tests on fasteners. Other minor conforming amendments would be necessary in order to

remove this NIST obligation.

We object to requiring NIST to certify laboratory accreditation by private entities. This responsibility would compromise our traditional role as the Federal Government's independent "third party" technical investigator and advisor. In addition, we believe that attempts by DOC to officially qualify private sector standards related programs would unnecessarily duplicate a complex set of arrangements that now govern domestic and international commerce.

As I said at the outset, the Administration is not convinced that legislation is necessary to resolve the counterfeit fasteners problems. There are available two voluntary approaches to this problem: one, the National Voluntary Laboratory Accreditation Program (NVLAP) at NIST; the other, the private sector certification program developed by the American Society of Mechanical Engineers (ASME).

The private sector standards community, government agencies and purchasers of special-purpose fasteners already have the expertise, motivation, and influence to take the necessary action. Indeed, they are well along the path toward fully remedying the counterfeit fastener problem.

The American Society of Mechanical Engineers has been working to develop a certification program to address the mislabelling of fasteners. The development of this program has included input from major industrial fastener users such as Boeing and General Motors, government personnel from DOD and NRC,

and the Industrial Fasteners Institute. ASME is currently holding a series of meetings to complete the consensus process, and plans to implement the program in the spring of 1990.

The ASME proposed Fastener Accreditation Program would include inspection of manufacturers' laboratories and testing of personnel for technical competence, an assessment of their quality assurance programs, testing of selected samples, and periodic unannounced inspections. Subsequently, a certification would be issued and a list of approved manufacturers and markings would be published. The ASME Fastener Accreditation Program would also provide for the participation of concerned Federal agency representatives in its management and audit activity.

The ASME Fastener Accreditation program is similar to its world recognized accreditation and inspection efforts that assure conformance to its Boiler and Pressure Vessel Code. The Code is a set of standards developed by volunteer technical personnel representing pressure vessel manufacturers and users. This set of standards, first adopted in 1915, is continually updated. Users of pressure vessels produced to the Code requirements can be confident that the vessel will be designed, fabricated, and inspected according to a safe standard.

The other approach is the NIST's National Voluntary Laboratory Accreditation Program (NVLAP) which has cooperated with the private section to evaluate more than 900 laboratories in 12 different product areas, such as computer protocols, carpets, radiation dosimeters, and asbestos abatement. Our program

utilizes open workshops to design specific program requirements. NVLAP's policies and procedures are published in 49 FR 446633.
The NVLAP functions on a fully-reimbursable basis, with operating costs recovered from fees collected from the participating laboratories. The cost of developing a specific new accreditation program is borne by the requesting organizations.

Accreditation by NVLAP has been required for laboratories wishing to participate in programs cited by regulatory agencies or, as for asbestos testing, when mandated by Congress.

The NVLAP program conforms to both national and international guidelines for laboratory accreditation. Our program is recognized by other nations, and we have entered into several bilateral agreements for the mutual acceptance of test results from laboratories accredited by NVLAP or the other signatory.

An accreditation program for laboratories that test special purpose fasteners could readily be established within NVLAP without the need to issue regulations or to prescribe a laboratory accreditation program within NIST. We find the NVLAP program to be completely consistent with the accreditation effort proposed in H.R. 3000.

We are also pleased to note that this bill implicitly recognizes that enforcement can be accomplished by relying on the judicial system and Federal regulatory agency infrastructure without additional law.

Thank you, Mr. Chairman. I will be happy to address any questions you or the Subcommittee may have.

Senator GORE. Okay, great.
Mr. Colvin.

STATEMENT OF BILL D. COLVIN, INSPECTOR GENERAL, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Mr. COLVIN. Yes, sir. Thank you, Mr. Chairman and members of the committee, for the opportunity to appear before you and to discuss the work of the NASA Office of Inspector General in the aerospace fastener industry.

The results of both our audit and investigative work in this area support the need for H.R. 3000. We have completed an audit at the Marshall Spaceflight Center, Kennedy Space Center, 17 manufacturers and six distributors of fastener products and were greatly assisted by NASA quality assurance personnel and their prime contractors.

The audit was conducted to address concerns over testing, certification, and traceability of aerospace fasteners. In one third of the manufacturers reviewed deficiencies were noted.

Aerospace fasteners are contractually required to meet national aerospace standards. To ensure that the fasteners meet these standards lot testing is required and certifications that the testing has been performed must accompany the lot.

Our first finding was that fastener certifications are insupportable by test results. We found that certifications were provided when, in fact, no testing had been performed. Undertesting had been performed. Reworked fasteners were certified as original. Lot integrity was compromised, and product substitution took place.

Under these conditions there is no assurance of the structural integrity of these fasteners, and if they were used in fracture-critical areas, a failure could be lift-threatening.

To correct these deficiencies we recommend that certification be provided with a reference to the manufacturer's lot number and that recorded test results accompany the certification.

Further, users should selectively test the lot and compare these results with the manufacturer's recorded test data. This can be accomplished contractually and will improve integrity.

A second major finding was the inability to trace fasteners from manufacturer to end use. Without lot traceability product integrity cannot be established and responsiveness to quality alerts is hampered.

To correct this deficiency we recommended that NASA require traceability from manufacturer to end use in flight systems. This, too, can be accomplished through contractual requirements and internal regulations.

The agency has agreed to establish lot traceability into controlled inventories only. We are not yet convinced this is sufficient to be responsive to quality alerts.

While not specifically addressed by our audit, what cannot be achieved contractually and which would be of major value in traceability would be a standardized system for head marketings to identify manufacturers.

Thirdly, current practices of disposing of uncertifiable fasteners do not preclude their false recertification and resale to the govern-

ment. To correct this we recommend developing procedures to preclude this practice.

Internally NASA can establish procedures for itself, but this does not eradicate the overall concern.

A fourth concern is the timely and adequate response to quality alerts by NASA and its contractors. These, too, are being corrected through contractual and internal practices.

NASA management generally concurred with our findings and recommendations and has taken or plans to take corrective action to address the concerns disclosed in our audit report.

In addition to our audit work, we have several ongoing criminal investigations in the aerospace fastener industry. As a result of one of our investigations, a major supplier of aerospace fasteners and the company's president and vice president were convicted on charges they performed less testing on fasteners than they had certified to.

The company and the president were convicted on 20 counts of mail fraud and 14 counts of making false statements. The vice president was convicted on 12 counts of mail fraud and 17 counts of false statements. All are awaiting sentencing.

In response to the indictment the Defense Logistics Agency suspended the company and its officials from doing business with the Department of Defense.

Another company owned by the same company president and his wife was also suspended. The office of Inspector General will recommend that NASA take action to debar the companies and individuals after sentencing.

Following a joint NASA-Office of Inspector General and defense criminal investigative service investigation, a major aerospace fastener company, its vice president and general manager and former quality control manager were indicted on one count of conspiracy and 32 counts of making false statements.

I believe our office has been in the forefront in identifying needed reforms in the aerospace fastener industry. We support the pending Fastener Quality Act as a step in the right direction to improve the fastener industry.

However, it is important to address the disposition of uncertifiable or surplus fasteners. In addition, the conspicuous marking of lot number on containers as the bill mandates may not be adequate to establish lot traceability.

Mr. Chairman, this concludes my oral remarks. I would be pleased to answer any questions that you or the committee may have.

[The statement follows:]

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Statement of
Bill D. Colvin
Inspector General
National Aeronautics and Space Administration
before the
Committee on Commerce, Science and Transportation
U.S. Senate

Mr. Chairman and members of the committee, I am pleased to have the opportunity to discuss with you our work in the area of aerospace fasteners. First, I'll give you some background information.

The NASA Office of Inspector General conducted an audit of fastener products and issued a final report to management in February 1989. The audit was initiated as a result of problems identified in Marshall Space Flight Center and Government-industry data exchange program alerts issued on various fastener manufacturers and suppliers. The objective of the audit was to evaluate quality control systems established by NASA, prime contractors, and suppliers of fastener products to ensure product safety and compliance with fastener certification standards. An initial survey was performed to evaluate policies, procedures, and controls established to certify fastener products. Based on the survey results, the review was expanded to include procurement policies, inventory controls, disposal actions, and alert procedures.

The audit was conducted at the Marshall Space Flight Center, Kennedy Space Center, eight NASA contractors, and six distributors of fastener products. Quality reviews previously conducted by Marshall Space Flight Center identified significant deficiencies with the documentation of fastener test results which supported manufacturer certifications. Marshall Space Flight Center initiated a prime contract to conduct fastener product reviews. These resulted in the identification and referral to the Office of Inspector General certain manufacturers' certifications which were not properly supported by required quality tests. Since prior Marshall Space Flight Center reviews had concentrated on fastener manufacturers, the Office of Inspector General audit emphasized distributors.

Our audit disclosed that uniform NASA policies and procedures had not been implemented to: ensure that fastener products used in flight hardware meet specified performance requirements; provide traceability of fasteners by manufacturer lot from origin to end use in NASA hardware; and assure timely and adequate responses to quality alerts. We also found that disposition practices needed improvement to preclude the redistribution or resale of uncertifiable aerospace fasteners to other Government agencies or the public. Our review disclosed a number of specific findings relative to these areas.

The first major disclosure in the audit was that fastener certifications were unsupported by test results. Product reviews of 17 fastener manufacturers performed by a contractor for Marshall Space Flight Center and our audits of fastener distributors showed that some certification statements were not supported by documented test results, while others showed the type and/or quantity of testing fell short of satisfying product specifications. Of the 17 manufacturer product reviews conducted, 6 resulted in the issuance of product quality alerts. This lack of adequate controls necessary to assure product compliance with applicable part standards and specifications resulted in the installation of untested or undertested fasteners in flight hardware. If this were to occur in "Fracture Critical" areas, it could have severe safety related consequences.

More consistent practices and verification controls are needed to request fastener certification packages. Marshall Space Flight Center did not, on a recurring basis, require any supporting test results to verify certification. Inconsistencies in quality control procedures at several contractor locations ranged from no verification to requesting comprehensive chemical/physical results and the performance of independent quality testing.

As a result of the above deficiencies within NASA and at contractor locations, product assurance has been significantly reduced because untested and/or undertested fastener products have been installed in flight hardware. In addition, existing NASA and contractor inventories contained potentially substandard fastener hardware that must be tested and recertified where possible, or replaced. Resolution of these deficiencies has and will continue to require substantial Government expenditures associated with identifying problem fasteners in stock and on flight hardware, testing and determining fastener useability, and removing and replacing installed and stored fasteners.

Another major concern included in the audit report was the nontraceability of fastener products in NASA and contractor inventories. Our audit showed that additional procedures and controls were needed to trace fastener products by production lot from the manufacturer to end use in NASA hardware. During our review of NASA and contractor inventories, we found aerospace bolts that did not contain manufacturer identification symbols. Without identification symbols, it is difficult for NASA to trace suspect fasteners when problems surface. In addition, aerospace fastener stock at the Marshall Space Flight Center was not traceable to procurement documents, supplier certifications, and/or to supporting test results. Similar deficiencies were also found at contractor facilities. For example, about 75 percent of the total fastener inventory of one prime contractor was stored only by part number and was not traceable to manufacturer lot number.

Without lot traceability, product integrity cannot be established because original manufacturer test data cannot be obtained, and subsequent independent testing cannot be projected because of mixed

lots in storage bins. More important is the inability of NASA and contractors to trace fasteners by lot number to end use products when problems are detected through alert or problem reporting systems.

Another concern included in the audit report dealt with false recertification and resale of surplus/excess fasteners. The audit disclosed that current practices of disposing of uncertifiable fasteners did not preclude their false recertification and resale to the Government or the public for use in Government flight hardware, commercial and private aircraft, etc.

We also found that the Marshall Space Flight Center procedures for issuing Government-industry data exchange program alerts did not ensure timely and adequate contractor responses concerning project impact and corrective plans, and did not provide for contractor technical direction when responses were unacceptable or not received. Delays in closing product alerts resulted in continued availability of untested/undertested fasteners in contractor inventories for use in NASA hardware.

In order to correct the conditions previously stated, we recommended that NASA management take the following actions:

- Issue instructions to identify criteria required for product certification and acceptance which will ensure product integrity.
- Establish quality assurance standards that will:
  - Provide for independent testing of fastener products procured by NASA and its contractors.
  - Require observation of testing and recording of test results at manufacturer sites.
  - Subject all NASA and contractor fastener suppliers to initial comprehensive product reviews.
  - Provide periodic quality surveys to ensure continued quality performance.
- Require that NASA and its contractors evaluate fastener stock to identify areas of inventory not traceable to manufacturer lot numbers.
- Ensure that unsafe fastener products are disposed of in a manner that will prohibit their future use in projects requiring high strength fasteners.
- Revise and clarify NASA's responsibility for the coordination, reporting and closure of the product alerts program.

NASA management generally concurred with our findings and recommendations and has taken or plans to take corrective action to address the concerns disclosed in our audit report.

As mentioned earlier in my statement, additional problems associated with fasteners used on NASA flight hardware were initially discovered by personnel at the Marshall Space Flight Center. In conjunction with its prime contractors, product reviews were performed of selected fastener manufacturers and associated testing certification processes. These product reviews determined that the required testing and certification process could be circumvented without detection under existing practices. These product reviews resulted in the issuance of several alerts, and the identification and referral to the Office of Inspector General of certain manufacturers' certifications which were not properly supported by required quality tests. Marshall Space Flight Center personnel provided technical expertise to my office during our audit of the fastener industry, and initiated a series of actions directed toward ensuring the integrity of fasteners used on flight hardware.

To date we have completed several criminal investigations in the aerospace fastener industry. These investigations have resulted in seven indictments and five convictions. We have also established a task force to further investigate this area as it relates to NASA. However, this is a governmentwide deficiency with obvious safety implications.

As a result of one of our investigations, a major supplier of aerospace fasteners and the company's president and vice president were convicted during a jury trial on charges they misrepresented and falsely certified test results on fasteners. The Office of the United States Attorney announced that this was the first conviction of a company president in connection with an investigation pertaining to defective and substandard fasteners. They were charged with performing less testing on the fasteners than they had certified to as required by the specifications of the prime contracts and subcontracts under the terms of which the fasteners were sold to NASA. The company and the president were convicted on 20 counts of violating 18 USC 1341 (Mail Fraud) and 14 counts of violating 18 USC 1001 (False Statements). The vice president was convicted on 12 counts of mail fraud and 17 counts of false statements. All are awaiting sentencing. In response to the indictment in this matter, the Defense Logistics Agency suspended the company and its officials from doing business with the Department of Defense. Also suspended was another company owned by the same company president and his wife. The OIG will recommend that the agency take action to debar the companies and individuals after sentencing.

Following a joint NASA Office of Inspector General and Defense Criminal Investigative Service investigation, a major aerospace fastener company, its current vice president and general manager, and former quality control manager were indicted on one count of violating 18 USC 371 (Conspiracy) and 32 counts of violating 18 USC 1001 (False Statements). It was alleged that they had not tested

fasteners sold to the Government in accordance with all applicable specifications, but certified they had. The former quality control manager pled guilty to one count of conspiracy and one count of false statements and was placed on probation for five years, fined $25,000, and ordered to perform 1,200 hours of community service. The company and its vice president are awaiting trial on the charges pending against them.

I believe our office has been in the forefront in identifying needed reform in the aerospace fastener industry. We support the pending Fastener Quality Act as it is a step in the right direction to improve the fastener industry. However it is important to address the disposition of uncertifiable or surplus fasteners. In addition, the conspicuous marking of lot number on containers, as the bill mandates, may not be adequate to establish lot traceability.

Mr. Chairman, that concludes my prepared statement on our work in the area of aerospace fastener products. I would be pleased to answer any questions the committee may have.

Senator GORE. Thank you very much, Mr. Colvin. Before I ask questions to the two of you, I would like to ask you, Mr. Kammer, if you and your colleague could scoot over a little bit. That way.

We are going to, as I mentioned at the outset, change the order a little bit and invite the co-author of the bill, Congressman Dingell, to come forward to the witness table.

Congressman John Dingell is a personal friend of mine, but much more than that, he is one of my teachers in the legislative process. His parents and mine worked together here on Capitol Hill, and when I first went to the House 13 years ago, I had the great good fortune of being assigned to the old Energy and Power Subcommittee back when it was the Committee on Interstate and Foreign Commerce and then as Congressman Dingell became Chairman of O&I and then the full committee, I also moved ever so slightly up the seniority ladder there.

We worked together a long time, and I am really delighted to have a chance to listen to you, this morning, Mr. Chairman.

Let me say in connection with this legislation I want to congratulate you and the members of your committee for the outstanding work you have done. A lot of people were completely unaware of this problem until your committee began to lay out the facts publicly, and you have gone beyond the task of laying out the facts and have devised what I believe as one Senator is an outstanding and creative solution to the problem.

I said before you arrived that we on the committee—and I speak for the Chairman of the full committee, I know, because I have talked with him about this or he has talked with me about it—this is a priority for our committee, and we have been getting some suggestions for a little fine-tuning here and there. That is the way the legislative process works.

And we want you to know that we plan to move with this legislation expeditiously, and we congratulate you for your initiative and the fine work done on this. And we invite you to proceed in any way you see fit. Your full statement, of course, will appear in the record, and you can present all of it, part of it, or something completely different if you want to.

STATEMENT OF HON. JOHN D. DINGELL, U.S. REPRESENTATIVE FROM MICHIGAN

Mr. DINGELL. Mr. Chairman, I thank you. After that very gracious introduction, I think anything I could say would perhaps diminish my appearance before this committee.

I would like to say thank you, Mr. Chairman, first for the great courtesy that you have shown me this morning and, second, for the way in which you have approached this piece of legislation which I regard as being very important.

I would like to express my thanks to the other members here of the panel for their gracious courtesy to me. I have got to get back over to the House to start dealing with some of the problems on reconciliation so that we can all go home and get this place adjourned. I am sure we all understand the importance of that.

Mr. Chairman, I remember you in the House with great affection and great respect, and I remember the fine job you did on the Com-

mittee on Energy and Commerce and also on the Energy and Power Committee. It was a great school, and we all learned together.

If it is true, in fact, that you were in any way a pupil or a student of mine, I could tell you, Mr. Chairman, that the student has far exceeded the master if that case be so, and I am very proud to see you sitting here in the Senate, and I rejoice that the country has the services of a man of your skill and decency. It means a great deal to me.

Senator GORE. Well, I appreciate that, but I am going to still come over to you to get my legislation passed.

Mr. DINGELL. We will work together.

Mr. Chairman, for the record, my name is John Dingell. The committee has completed in the House in concert with our sister committee, the Committee on Science, Space, and Technology chaired very ably by Mr. Roe, the piece of legislation which you have before you, H.R. 3000.

The legislation, we believe, when it came here was about as good as we could make it. I will tell you that I am aware that your consideration of this legislation and the comments of witnesses and others who have studied this legislation have indicated that there are perfections which can be made in them, and I would urge that that be done.

My statement sets out a number of situations which we found with regard to these nuts and bolts. I will not burden you with the language of what is in it on these matters, but I can tell you that there are a large number of guilty pleas, criminal indictments, search warrants and revelations in the press which have tended to underscore the events that we found with regard to bad nuts and bolts, and they are showing up everywhere.

And I mentioned in my statement they are showing up in an energy cogeneration plant, U.S. Postal Service facilities, several Corps of Engineers projects, General Motors' Saturn plant, power companies in Virginia and Alabama, the United Airlines terminal at O'Hare Airport, and the Louisiana Department of Transportation for use in an interstate highway bridge in connection with fasteners that were sold by only one company.

The Department of Defense has had a bad time with this. They found an enormous number of their vehicles were rendered nonready for combat by reason of the presence of these kinds of fasteners in them.

They found, for example, that the tanks which were travelling around the highways in Germany were shedding so many bolts that they became the subject of complaint by the German state of Hesse to the U.S. Defense Department on grounds that our tanks were shedding bolts so fast they were becoming a road hazard for the motorists in that country.

It can also be observed that these bolts and nuts and fasteners so badly contaminated the Department of Defense supply that the Department of Defense was compelled to remove them on one occasion at enormous cost and difficulty. And these were then sold through recyclers to surplus dealers, who, in turn, sold them back to the Department of Defense.

So the Defense Department wound up having its nut and bolt supply contaminated with these on two separate occasions.

Rather heroic measures have been taken now by the Department of Defense, after denying that there was a problem, to see to it that this kind of situation would not again obtain. And we are hopeful that they will be successful.

It is unfortunate, however, that the character of these requires enormous vigilance. And the requirement for the setting of standards, establishing traceability, and so forth, is absolutely essential to assure that there be no repetition of these unfortunate situations.

In one instance alone, the Defense Logistics Agency spent more than $5 million weeding out some 30 million fasteners among the 90 million fasteners that had been frozen. The situation got so bad that a large number of the vehicles which were sent on a readiness exercise into Central America were incapable of functioning and being driven off of the aircraft, simply because of the failures of the bolts in the suspension of a large number of American military vehicles.

It also was the case that the reliability of tanks and armored personnel carriers was so badly affected that in order to meet general officer inspections on some occasions, the Defense Department was compelled to go around and to epoxy the heads on the bolts which had broken off or sheared off on armored personnel carriers, and the tanks which had just been repaired while on the way back from the battalion wash rack would break down by reason, again, of bolt failures.

This is a very significant problem in terms of not only readiness, but also in terms of cost to the Defense Department.

I can observe that our fastener industry is an absolutely essential component of our defense and preparedness institution. And failing to have an adequate supply of reliable bolts and nuts and fasteners and failure to have a reliable supply of these and a reliable group of suppliers who are able to provide in the event of emergency, or on a continuing basis to assure our readiness, is a major problem.

And I can observe that these scoundrels who have been importing these inferior bolts—substandard—have been not only profiting mightily, but have severely injured the American fastener industry.

So there are a number of reasons for addressing this question, which go well beyond just the question of fairness to American manufacturers and American workers, they go actually to the very reliability of our defense establishment.

So, for these reasons, the legislation is important. It was passed unanimously by the House. As you and the witnesses have wisely observed, there is need for some modest perfection in the legislation.

And as you have observed, Mr. Chairman, the perfection of that is part of the responsibility of both bodies. And we look forward on our side to working with you enthusiastically to perfect this bill, to have the kind of ancient cooperation and friendship that your family and mine, and you and I, and your daddy and my daddy,

have shown and felt during our years of service, which go back so far.

Senator GORE. Do not leave Debbie out, now.

Mr. DINGELL. Oh, the lovely Deborah, and your wonderful wife, Tipper, too.

But, in any event, Mr. Chairman, I am well aware of the fact that you are holding this hearing with great speed, and I deeply appreciate it. It is a good piece of legislation and it will benefit the country in many, many ways.

Thank you, Mr. Chairman.

[The statement follows:]

TESTIMONY OF
THE HONORABLE JOHN D. DINGELL
BEFORE THE
SENATE COMMERCE COMMITTEE
MONDAY, NOVEMBER 20, 1989

Mr. Chairman and Members of the Committee:

It is my pleasure to appear before you this morning to urge your Committee and the Senate to take favorable action on H.R. 3000, the Fastener Quality Act. I deeply appreciate the scheduling of this hearing at this season of the year and hope that we will lay the foundation today for Senate consideration of the bill early in the Second Session.

H.R. 3000 is an important piece of legislation that will preserve jobs and industry, improve our combat readiness, and protect the safety of virtually every American. This bill garnered more than 150 co-sponsors in the House, from both parties and from all points on the political spectrum. This broad show of support, capped by passage in the House by a unanimous voice vote, demonstrates that H.R. 3000 should become law.

Havoc has been wreaked in the civilian and military sectors of our economy by substandard, mismarked, and counterfeit metal fasteners. The Subcommittee on Oversight and Investigations, which I chair, documented this problem in five days of hearings and a 62-page report issued in July 1988. A continuing series of guilty pleas, criminal indictments, search warrants, and revelations in the press have served to underscore the seriousness of the situation.

To give you just one example of the problem we face here, a single scofflaw company, Metal Building Bolts, is known to have supplied substandard and/or misrepresented fasteners to an energy cogeneration plant, the U.S. Postal Service, several Corps of Engineers projects, the General Motors' Saturn plant, power companies in Virginia and Alabama, the United Airlines terminal at O'Hare Airport, and the Louisiana Department of Transportation for use in an interstate highway bridge.

This is not an isolated case of one bad apple. Last June, federal agents raided four Salt Lake City warehouses and seized tons of bad nuts and bolts that were alleged to have been destined for military and private sector uses. On the same day, three companies in Denver, two in Colorado Springs, one in Wyoming, and another in Illinois were also raided. Also in June, a federal grand jury in Fort Worth indicted a U.S. distributor and Japanese manufacturer who allegedly sold defective fasteners to the Pentagon and to the Comanche Peak nuclear power plant.

Unfortunately, raids, indictments, and convictions, while necessary and commendable, occur after the damage has been done. Once these shoddy goods have found their way into the stream of commerce and have become commingled with fasteners of every variety, problems tend not to be discovered until it is too late. In the Saturn plant incident that I alluded to earlier, for example, it took the death of a construction worker to bring this hidden problem to light.

Once the problem is discovered, it is very difficult and extraordinarily expensive to purge one's inventories of these counterfeit and substandard goods. In a period of five months during 1987, the Defense Logistics Agency alone spent more than $5 million weeding out some 30 million fasteners from among 90 million that had been frozen for testing and analysis. American industry has been subjected to similar expense and inefficiency, further hampering our competitive standing in the world.

The Fastener Quality Act responds to the urgent need to restore the quality of metal fasteners used in the United States and to establish an effective deterrent against the kinds of scandalous fraud and abuse that have been perpetrated in connection with the sale of fasteners. The legislation proceeds from the assumption that it is much easier, much more effective, and much more economical to test fasteners before they enter the stream of commerce than after they have become commingled or incorporated in other equipment or structures.

The bill provides for inspection, testing, and certification, in accordance with standardized methods, of fasteners sold in commerce and used in critical applications. The lot number is also to be marked on every container of fasteners sold for resale. A sample of each lot of fasteners must be tested under the bill by an accredited laboratory to establish conformance of the lot to the standards and specifications allegedly followed during manufacture.

In order to ensure that appropriate documentation will be readily available in the event of subsequent prosecutions, civil disputes, or disagreements, a domestic manufacturer is required to retain an original test certificate for each lot, and importers must receive and retain an original test certificate from any foreign manufacturer. Alternatively, an importer may assume the role of a manufacturer by having a sample of each imported lot tested after receipt. A copy of the original certificate will then be available to any subsequent purchaser upon request.

Where an alteration subsequent to manufacture materially changes the characteristics of a fastener, the fastener must be tested as though newly manufactured, or the alteration must be described in writing to the purchaser. The manufacturer's insignia, which is required in most cases by the private standards, is to be recorded by the Secretary of Commerce to provide traceability.

The Secretary of Commerce, acting through the Director of the National Institute of Standards and Technology (NIST), is to establish a laboratory accreditation program for critical application fasteners. The program will measure the ability of laboratories to meet the laboratory accreditation standards issued by consensus standards organizations.

The Director of NIST is also required to establish conditions under which the accreditation of laboratories by private entities or foreign governments can be accepted. The Secretary will be required to ensure compliance with these conditions by the private entities and foreign governments. Costs of this accreditation will be fully reimbursable to the Department through fees for accreditation services.

Finally, civil injunctive relief and criminal penalties for knowingly certifying, marking, or selling counterfeit fasteners are prescribed.

Mr. Chairman, H.R. 3000 is the product of more than two years of investigative and legislative activity on this subject. It combines the best elements of bills previously introduced by our Committee and the Committee on Science, Space, and Technology. It incorporates many suggestions provided by representatives of the legitimate fastener industry in hearings before our two Committees and in subsequent discussions. Since passage by the House, some groups have brought to our attention a handful of essentially technical problems which I would be pleased to work with you to address. I hope we can move expeditiously on those issues and on the legislation as a whole, so that we can move the bill to the President's desk early next year. Once again, thank you for your courtesy and interest.

Senator GORE. Well, thank you, Chairman Dingell. And let me say that the suggestions for fine tuning, to which I referred earlier, all fall in the category of just that—fine tuning. They in no way threaten to change the important provisions of the bill you and Chairman Roe have drafted.

It is an excellent piece of legislation, in my opinion and in the opinion of those colleagues with whom I have discussed it.

And let me say again that this committee has watched with amazement as your committee has unfolded this story for our nation. Really, it is a shocking story, a surprisingly extensive problem, one greatly in need of remedy. And we are indebted to you and your colleagues for identifying this problem and, as I said, pointing toward a logical and effective solution for the problem.

Because the record you have compiled has been an extensive one, I believe that your statement stands and speaks for itself this morning. I do not wish to explore it further in questions. I will recognize Senator Burns. We are going to wait, I might say to my colleague, for questions to Mr. Colvin and Mr. Kammer, until Chairman Dingell has completed his appearance here.

And if you have questions of him, please feel free to direct them to him.

Senator BURNS. Thank you, Mr. Chairman. And I want to apologize to you, Congressman, for being late this morning.

When I took a look at this legislation and studied it a little bit—and I want to commend you on your efforts here, I think the effort is noteworthy and should be taken very seriously.

I can remember my first ride in a jet when I was in the Marine Corps out of El Toro, the Marine Corps Air Station. And I, through the intercom system, asked the pilot how fast we were going. He told me how fast we were going, and I said, boy, that is skipping right along. And he said, well, if you want to relax a little bit, you can give some thought to the fact that this thing was put together on the low bid.

Which does not make you feel very comfortable either.

But I do not worry about those things. In fact, if someone told me that if I could lose 50 pounds by the 1st of June, I could ride in the space shuttle, I think I could get it done by the 1st of February, because I am just that kind of a person and I like a little adventure.

I want to just get your comment on this legislation, because I happen to believe that we have got a lot of substandard material on the market that is for the consumer and also for our defense complex. And I am wondering, I guess my first question would be, does the legislation address who sets the standards? And are those standards tested before they are used on those products?

And I would just ask you to comment, could this be one of the flaws in the competitive bidding process for government contracts, especially in the defense complex?

Mr. DINGELL. Well, I am not able to give you an answer as to the problems or how this business of standards impacts upon the overall business of bidding on contracts for and by the military. I can observe to you that these defective fasteners are and have been a very major problem for the military. We found that the entire

supply system of these was contaminated now with bad, substandard bolts, which have crept in.

The basic thrust of the legislation is that private standard-making organizations, which have done a fine job with regard to American fasteners, nuts and bolts in particular, but other fasteners, too, have done, over time, a superb job. And as long as we had the responsible fastener manufacturers in this country dealing with this issue, there was really relatively little problem.

This requires that there be testing, and it requires that private standard-making institutions make the standards. And it requires that testing laboratories be essentially licensed and regulated. And it requires that where there are lots of these which are produced, they are accompanied by a certification that the fasteners meet the standards which are required.

The standards basically fall into several things. First of all, they have to be properly alloyed. And failure to do that sees to it that if the deficiency is great enough, that they do not meet shear, torsion and tensile strength requirements that have to be imposed upon fasteners. They also do not meet temperature requirements. They may not operate well at high temperature or they may not operate well at low temperature.

We also found that there are dimensional problems. Some of these nuts and bolts that are coming in are not even of proper standards and do not fit properly, so that it becomes very easy for the threads on either the nut or the bolts to shear.

And this would, of course, require then that, in addition to the alloying and the heat treating, that there be dimensional standards which are met. Government stays out as much as possible. The private testing institutions, which do a good job, and the private standards makers, which do a good job, would largely conduct this program under the guidance of the government.

And this is an attempt to do as much as we possibly can through the private system, but we see to it that the private system is made successful in its regulatory efforts by having the necessary government strictures imposed on those who do not comply.

Senator BURNS. And I agree with that assumption. We do not buy anything electrical from a consumer product unless it has got the UL stamp, Underwriters Laboratories. That is a private organization and I am not real sure how it is set up.

It seems to me that if a bidder comes in, and he has got these bolts, maybe we should have the same kind of a testing center for fasteners that we have for our electrical appliances that we put in our own homes.

And I am wondering whether the standards have to be the same for an offshore supplier as they would be for a domestic supplier.

Mr. DINGELL. No one is treated differently; everybody is treated alike. We are not interested in excluding foreign suppliers, we just want to see to it that they do as good a job as our own people do.

Senator BURNS. And I do not want standards put on a domestic manufacturer that would not also apply to an offshore guy or a person that is trying to supply that market.

I plan to support some parts of the legislation. I think it is perhaps long overdue, and I commend you for doing what you have done. But I wanted to make it very clear that sometimes legislation

does not do what we think it will do, as far as trying to remedy a problem that we have in a so-called free marketplace. But the testing end of this thing is of great concern to me, too.

I will tell you what, I am a farmer, and I can guarantee you it is hard to buy good bolts. If you can believe this folks, you can go into a hardware store, and you do not get the same product that you could get a few years ago. And once you get into harvesting or planting, it is a damn poor time to be breaking down.

And so we put up with it in the private sector, too, and it is very costly.

Mr. DINGELL. Well, the ASTM, which has been one of the major testers, is in support of the legislation. The bill passed the House unanimously. It also came unanimously out of the Committee on Energy and Commerce and unanimously out of the Committee on Science and Technology. It was studied by both.

And I will tell you that as we went through this, there were differences between the two committees. There also were differences with the administration over this. But the internal differences inside the House on both sides of the aisle, on both of the committees, on the proceedings on the floor have been entirely eradicated.

Now, as Chairman Gore has pointed out, there are some minor improvements which are needed, and I fully support the idea that those should be carried forward, and I am prepared to work with this committee and with my good friends over here to try and resolve those differences so that the legislation is as good as we can make it.

I want to make it clear, on the private sector, it is not substitution of government for what is now done in the private sector. It is an assurance that our part of the private sector, which usually and almost invariably complies with the requirements of good testing and good quality in meeting American standards, is protected in that against misbehavior by foreigners who do not feel so compelled, and who achieve an enormous economic advantage over American manufacturers and American workers.

Senator BURNS. Well, I commend you on that and I know that you have got a busy day today. We are all trying to go to turkey dinner at the same time if we possibly can, and I do not want to hold you up any longer on this, but I commend you on it. And thank you very much for coming. And I am sorry I was late this morning.

Senator GORE. I might just say that if there was a way to trace back the manufacturer of a bolt that failed, then that manufacturer would be a lot more accountable for the bolts produced next year.

Mr. DINGELL. That is why the certification provisions are in the legislation.

Senator GORE. And I might also note for the record, since Senator Burns referred to Underwriters Laboratories as an example, that I am aware that the oversight and investigation subcommittee, in fact, conducted a very lengthy inquiry into the practices of Underwriters Laboratories and exactly how that process works and sometimes does not work as well as it should.

So the experience your committee has brought to this problem is very broad and very deep.

Chairman Dingell, thank you very much. It was a great pleasure to have you here today.

Mr. DINGELL. Mr. Chairman, it is a privilege to appear before you. Thank you.

And to my colleagues here on the panel, thank you, gentlemen. I appreciate your support and help on the legislation. And I also am grateful for your patience.

Thank you, Mr. Chairman.

Senator GORE. Surely. We anticipate moving expeditiously on this legislation.

Thank you again.

Mr. DINGELL. Thank you, Mr. Chairman.

Senator GORE. Now, let us move to questions for Mr. Colvin and Mr. Kammer.

Let me ask just a couple of quick ones, Senator Burns, and then I will yield back to you.

Mr. Kammer, from what I have learned about this problem, it appears that a great many substandard and counterfeit bolts are getting through the existing controls and ending up installed in places where they should not be. This leads me to three initial questions.

First of all, how many government agencies and private companies now use laboratory testing programs similar to those envisioned in H.R. 3000 to screen out inferior fasteners, and how well did these screening programs work if so many defective bolts got through?

Mr. KAMMER. There really are not established systems for laboratory accreditation at all for bolts at the moment. The Department of Defense is setting up a program for qualifying vendors, and the idea is to establish the heritage of the bolt. If you know who made it and who gave it to you, if you do not like it, you will know who to go talk to. And to the best of my knowledge, that will be the first time the testing is done.

So far, people have relied on the vendors to certify the quality of the bolt and use contract provisions to enforce them.

Senator GORE. Why have not all the government agencies and private firms established this kind of laboratory testing program? Are such programs expensive or difficult to operate, or has it been just a problem of inertia?

Mr. KAMMER. Well, they are not particularly expensive and they are not really that hard to set up even. The extent of the problem is still at the anecdotal stage, if you will. There are a lot of examples of specific cases where there has been a failure, and it is pretty unacceptable, and Mr. Colvin alluded to a number.

There really is not any statistical evidence. Additionally, the size of the industry is about $6 billion a year in shipments. About 20 percent of that is imported, and 80 percent is not. For most cases where there is an established vendor relationship with the buyer, things seem to go pretty well, and hence the Department of Defense approach.

It is just lately that people have begun to become sensitive to the fact—the example that Mr. Dingell used of the Department of Defense buying back the rejects. I mean you have to have a testing program if you are going to avoid stuff like that.

Senator GORE. If H.R. 3000 becomes law, will it, in your view, lead to major changes in existing testing and screening procedures? That is, will the legislation lead to a major change in the way fasteners are tested or screened? Or is it more fair to say that the bill envisions a logical extension of existing practices?

Mr. KAMMER. The methods that would likely be used already exist. They were developed through the Society of Automotive Engineers, and they are very generally accepted. And it would be quite unsensible to do otherwise than use the generally accepted procedures.

Most of the change would be the requirement that you demonstrate compliance. And there is obviously some administration associated with that, but there would not be any technical changes in the test methods that I can see.

Senator GORE. Now, the NIST laboratory accreditation program already in existence provides an example we can look at, particularly the national voluntary laboratory accreditation program's relationship to asbestos.

As I understand it, recent legislation directed you to certify laboratories involved in the clean up of asbestos. Can you please tell us how this program has worked in practice, and tell, for example, how many asbestos laboratories you have certified thus far?

Mr. KAMMER. The legislation envisions two waves of accreditation, the first one for bulk asbestos and that is accomplished now, and there is 585 labs that are accredited for testing for bulk asbestos.

The next step is asbestos in air, which is where you can breathe it, and there are 122 laboratories that have qualified at the first step. It is much more complicated to do in air, and it will be a while longer before they are all qualified fully.

But the way it works is you pay a modest fee and we send people to inspect your laboratory and we send you some samples to test. It is pretty common sense.

What happens in a lot of cases is, if people fail the first time, they ask us, well what do we think they were doing wrong; and we can show them how the test method works; and a lot of them, the second time around, are able to comply, so it has an interesting side effect that we are improving the quality of the testing laboratory in a lot of cases.

Senator GORE. I understand that some have expressed concern that your NIST laboratory accreditation program can sometimes be overburdened and may actually charge higher prices than private accreditation services. Do you think that there is any merit to these criticisms? How prepared would NIST be to directly accredit the large number of laboratories that would come under H.R. 3000?

Mr. KAMMER. Well, one imagines that H.R. 3000 would likely result in accrediting a couple of hundred laboratories. We did nearly 600 in asbestos in 18 months, and that was from developing procedures that did not exist at all—test methods that did not exist at all.

This is a simpler case, in that the test methods really already exist and the technology of conducting the tests is easier than in the case of asbestos. I would not reckon that it is a particularly difficult problem.

Senator GORE. I understand that at least one Federal agency—the Defense Industrial Supply Center of the Defense Logistics Agency has used a private accreditation service to supervise laboratories that test fasteners bought by the military.

In your view, how well has this arrangement worked for the Defense Department? Does this experience suggest that private accreditation groups could in fact handle the work load involved in certifying labs under the H.R. 3000 requirement?

Mr. KAMMER. To the best of my knowledge, the Department of Defense is satisfied with the performance under this. This is a conceptually different activity, however, to employ a contractor, if you will, to monitor the quality of the output of yet another contractor, and that in my mind is quite different from establishing a procedure where in the name of the government an entity can go in and accredit the performance, or lack of performance, of a broad range of laboratories.

Senator GORE. Mr. Colvin, clearly your excellent work and that of your colleagues has uncovered a considerable degree of fraud in the sale of fasteners to NASA. Let me ask you two questions about that. First, how common do you think fraud is in the sale of fasteners to NASA? Are we talking about a pervasive, persistent problem, or just a few bad apples in the barrel?

Mr. COLVIN. Senator Gore, I consider this to be a pervasive problem based upon not only the work of the audit but particularly the investigative work that we have on-going at this point in time. I would consider it pervasive.

Senator GORE. Well, I know that NASA has only recently begun this current round of prosecutions that followed your audit, but can you say anything at this point about whether your investigations and the resulting prosecutions have deterred other companies from selling inferior or counterfeit fasteners? Have the number of suspicious cases declined?

Mr. COLVIN. Senator, there is no way to measure whether that has declined or not, based upon the prosecutions. It would be my assumption that the prosecutions have made a deterrence, that they have assisted in bringing integrity into the process.

Senator GORE. We frequently hear that government contracting rules require agencies like NASA to accept the lowest bid for parts and services. Let me ask you about the relationship between contracting requirements and the problems we have been talking about this morning.

Do government procurement regulations inadvertently lead to a situation in which the government buys fasteners from less reliable suppliers? Is there anything that agencies or Congress should do to ensure the proper balance between high quality supplies and keeping procurement costs down?

Mr. COLVIN. No, senator, I do not see that. The procurement regulations certainly allowed for the procurement of fasteners with integrity. It just was not there.

Senator GORE. All right. Let me recognize Senator Burns.

Senator BURNS. I have to write down some notes. I have a fantastic memory, but it is short.

I was interested in your comment that you really do not—and I will let either one of you answer this, and I may be venturing into

uncharted waters but you can tell me that too—that you do not employ outside laboratories to test some products that you purchase before you use them. Is that a correct assumption, or do you do your own testing?

Mr. COLVIN. Senator, for NASA we use contractors to assist us on this and NASA has also set up its own testing laboratory to selectively test the samples that are being provided by the manufacturers and distributors.

Senator BURNS. What do you think, in your own personal opinion, this piece of legislation will do?

Mr. COLVIN. I think it will assist us in maintaining integrity in the process.

Senator BURNS. I have no further questions. Senator Lott, do you want to ask any questions, being as you are the only member here?

Senator LOTT. No, I do not believe so. I apologize for not being here earlier.

Senator BURNS. We want to thank you very much for coming this morning, and I am sorry I was a little bit late.

Thank you very much. You are excused. We appreciate your comments on this and we call the next panel, which is Jim Schiele of the St. Louis Screw and Bolt Company, Steven Schonholtz of the Gardenbolt International Corporation, John Sullivan, who is President of Accurate Fasteners Incorporated from Boston, Mass., and Donald Keil, who is Director of Quality at Caterpillar Company in Peoria, Illinois.

Two famous names came out of Peoria. I think one of them went out of business. I think Walkers went out of business, did they not?

Mr. KEIL. Yes. Walkers and Pabst both went out of business.

Senator BURNS. And we ended up with Caterpillar. I guess I would call on Mr. Schiele. You are Chairman of the St. Louis Screw & Bolt Company.

We welcome you gentlemen here this morning. We are limiting the statements to five minutes, and of course it also could be acknowledged that your full statement will be entered in the record and available to all the senators involved in this Committee, so if you could compress your statements down that would facilitate things.

So I would call on Mr. Schiele at this time for your opening statement, sir, and thank you for coming.

STATEMENT OF JAMES E. SCHIELE, CHAIRMAN, ST. LOUIS SCREW AND BOLT COMPANY, REPRESENTING THE INDUSTRIAL FASTENERS INSTITUTE, ACCOMPANIED BY CHARLES WILSON, TECHNICAL DIRECTOR

Mr. SCHIELE. Mr. Chairman, thank you. I was very flattered to be asked to come, and I have asked to come with me Charles Wilson, who is the Technical Director at the Industrial Fasteners Institute, to help answer some of the questions.

Also, I must say I feel deeply honored to follow Chairman Dingell to the podium here. Surely he expressed a lot of the concerns, and expressed them a lot better than I could.

Mr. Colvin also with great specificity enumerated some of the things contained in the bill which surely we feel are very, very important to the passage of the bill.

This morning, I am not going to read our statement to you because the official statement has been submitted ahead of time to the Committee, and as requested it does contain our fine-tuning, our so-called fine-tuning, to H.R. 3000.

But I come to you as Chairman of a relatively small industrial fastener producer in the United States, St. Louis Screw and Bolt. We have been in business for over 100 years. We produce larger products that are used principally in the capital goods markets and the infrastructure. I personally have been in the business for 32 years.

Today, I represent the Fasteners Institute, which is the trade association that includes about 75 percent of the fastener manufacturing capacity in the United States. Fasteners are about a $4 billion industry in our country.

There are several interesting aspects of the bill. First of all, in our view—in my view, it should not cost the government any money to put the bill in place. Conversely, it will save the government money because of some of the needless waste that has occurred and as Congressman Dingell has so precisely phrased his words, "cost the American taxpayer and American industry untold millions in breakdowns, down time, reconstruction and other unnecessary inefficiencies."

I have personally chaired the Government Affairs Committee for the Fasteners Institute since 1982. The issue of legislation to regulate how fasteners are sold in commerce, how they are certified and traced, was never really an issue. Legislation was never considered vital to the strength and the performance of the fastener industry in our country.

But we were quick to recognize the wisdom of this bill when recent disclosures of mismarked and substandard fasteners created the issue and investigations into circumvention of standard practices and engineering standards shaped the necessity of legislation.

My comment is that the standards are perfectly fine. They are more than adequate. It is the circumvention of the standards that has caused the problem. The system did not go out of control, but segments of the system that produce 200 billion fasteners that affect every part of our lives, part of that system did badly stray off course, and what has resulted has been a host of fasteners from untraceable sources.

These have been increasingly related to numerous costly failures. The record is very clear. It reads easily. We know we need a bill.

The fastener industry in the United States is a mature industry. It was in full swing before the first half of the last century. It was and still is a relatively simple business to understand. In many cases, you tighten a nut on the end of a bolt to achieve a connection between two pieces of material.

The concept is still simple, but many rules of the road have changed. It is now not only necessary to know that certain physical values have been achieved, but that those values can be documented, certified to be accurate and then passed on to end users so that they will know what they have.

What became possible, and what happened, were endless ways to circumvent the testing and certification system in order to supply a lower cost, cheaper part to the end user. But as we know, the end user in too many cases ended up paying more. The suppliers of the so-called counterfeit products pocketed the difference.

The law is important because of the violations that have occurred too frequently. The law addresses the violations. I am going to enumerate a few of those for you.

The alteration of fasteners is one of the most pervasive and one of the most difficult things to trace. The law addresses the issue of alterations.

Material substitutions. Material coming in on fasteners that was not what it was purported to be. Wrong plating materials. As an example, zinc plate being used instead of a cadmium plate. You cannot tell the difference by looking.

Meaningless performance markings on the heads bolts. Misleading markings, where there are no specifications or standards to back those markings up, or absence of any symbol on the fastener at all, where manufacturers' marks are simply not there, or if they are there, they are not traceable.

The IFI publishes for $15 a manual which shows all of the registered head markings, which are like trademarks, that appear on bolts.

So the issue here is really accountability. Someone said earlier—I believe Mr. Colvin said—integrity. Yes, integrity and accountability, and that is what H.R. 3000 really addresses. The preamble states that a bill to require that certain fasteners sold in commerce conform to the specs to which they are represented to be manufactured, provide for accreditation of laboratories engaged in fastener testing to require inspection testing and certification in accordance with standards and in accordance with practices that will increase fastener quality and reduce the danger of fastener failure.

Finally, to present possibly a question which may occur, does the bill restrict daily commerce, trade, or does it inhibit the supply of bolts and nuts and washers to the marketplace? The answer unequivocally is no. It does not inhibit anything at all. Quite to the contrary, it should expedite the flow of quality products to the end user.

H.R. 3000 is not a quick fix. It is not designed to cure all the ills. It is not a tonic. It is a well thought out piece of legislation whose time has come.

I want to summarize briefly what I just said. The bill came into existence because there is a real need for the bill. The bill will not cost money. It will save money. It will save the government money, it will save the taxpayers money, and the Industrial Fastener Institute, which does represent 75 percent of the producing industry in the country, the IFI, does support the bill. We have made a few fine tunes on it which we know you will give your consideration to.

Again, I want to thank you. Senator Gore, I want to thank you, and Mr. Burns, for inviting us today. Thanks.

[The statement follows:]

A STATEMENT OF SUPPORT FOR H.R. 3000

by

INDUSTRIAL FASTENERS INSTITUTE

to the

UNITED STATES SENATE

COMMERCE, SCIENCE AND

TRANSPORTATION COMMITTEE

November 20, 1989

The Industrial Fasteners Institute (IFI) representing 138 companies, including 92 fastener manufacturers in North America and 46 suppliers of raw materials, machinery, tooling, and services wishes to express full support for H.R. 3000.

Since the Institute's initial research report published on April 4, 1986, investigators have fully confirmed our worst fears: namely that enormous quantities of substandard and/or mismarked bolts and screws have been introduced into the stream of commerce of the United States. Some of these have:

> " . . . killed people, reduced our defense readiness and cost the American taxpayer and American industry untold millions in breakdowns, downtime, reconstruction, and other unnecessary inefficiencies."
>
> Congressman John D. Dingell,
> Chairman, Subcommittee on
> Oversight and Investigation

Like a ticking time bomb, new failures are surfacing which clearly demonstrates the magnitude and the significance of the findings which were well documented in: "The Threat From Substandard Fasteners: Is America Losing Its Grip?" published by the House of Representatives Subcommittee on Oversight and Investigation in July of 1988. Since the publication of this report, substandard fasteners have been found in space shuttle equipment, chemical plants, guided missiles, the steering gear pitman arms of large trucks, the rear end suspension of buses, and nuclear power plant installations. The failures of bolts at the Saturn plant in Tennessee and in the pitman arm of a Freightliner truck on May 13, 1989 have been directly attributed to loss of life. Unscrupulous vendors have been found who have sold reworked, untested fasteners to Boeing, American Airlines and a host of other airplane companies.

IFI estimates that in the United States 200 billion fasteners are used annually to assemble our cars, trucks, planes, tractors, bridges, appliances, weapons for defense and power plants. Millions of these fasteners have been produced offshore by some companies which have an absence of control in their manufacturing process and little, if any, testing ability or capabilities. This has resulted in a host of fasteners from untraceable sources which have been increasingly related to numerous and costly field failures.

The citizens of our country are entitled to the assurance that the fasteners which are used to assemble our airplanes, trucks, buses and bridges are quality products which are in conformance with engineering standards and specifications. These standards and specifications are the product of millions of man-hours of voluntary effort and have served to provide this country with worldwide leadership because of their engineering excellence. They are widely available and used by all manufacturing countries throughout the world. Indeed, they serve as the cornerstone for United States manufacturing. The deliberate subversion of these standards by those who place greed first without regard for the consequences, has undermined fastener user confidence in engineering standards and specifications which is critical to our success as a manufacturing nation.

The House Committee on Energy and Commerce has made a sincere and excellent effort to provide a bill which will not disrupt commerce or trade in the United States but will

stop the introduction of these substandard fasteners. Its basic premise is that the user is entitled to documentation identifying the manufacturer of the fastener product and to information showing whether the product meets the requirements of the applicable standards and specifications.

In a careful review of H.R. 3000, the IFI has a major area of concern with the alteration section under provisions of paragraph 5 (e)(1) and 5 (e)(2). The present language does not require the removal of the original manufacturer's mark nor the addition of the alterer's mark. Once an altered product is in the field and it fails, only the original manufacturer will be identified, and the records may not exist to prove that the fastener was subsequently altered after manufacture. Altered fasteners heavily involve fasteners used in aerospace and other high strength applications. Alterers typically buy fasteners at surplus from the Department of Defense or airplane manufacturers such as Boeing.

> IFI would suggest that the alterer be required to mark his cartons or packages to indicate that their contents are altered fasteners. Further, in section 5 (e) (2) a period should be placed after (1) of line 13, and the remainder of the paragraph should be deleted. In other words in this paragraph delete the words: except that such statement need not be provided to retail sellers or retail consumers.

Further IFI recommends that Section 5 (f) and 8 (b) be revised as follows:

Section 5 (f) Commingling Prohibited

> It shall be unlawful for any manufacturer or person who purchases any quantity of fasteners, except for resale to retail, to commingle fasteners from different lots in the same container.

4

Retail is a sale by a business or person over-the-counter to an individual whose use is primarily for household consumption and where... documentation beyond the sales receipt is not required.

Section 8 (b) Manufacturers, Importers, Private Label Distributors

Add a new sentence to the paragraph which now ends on line 17 which would read: "If the first purchaser from the manufacturer, importer or private label distributor purchases for resale, the first purchaser shall provide a copy of any such certificate upon request to those who purchased from him."

These proposals are made to improve the present legislation and to protect the integrity and quality assurance of mechanical fasteners used in aerospace and nuclear power plant applications. Further, the IFI suggestions will help smooth out the responsibility for supporting documentation.

In summary then, IFI believes that H.R. 3000 will address these problems which have been identified during the investigation to date:

- Material substitution
- False certifications
- Inconsistent heat treatments
- Absence of stress relief
- Wrong plating materials
- Meaningless performance markings that have no foundation in specifications and standards.
- Absence of manufacturer's symbols and/or use of symbols that are not traceable.
- Improper thread engagement
- Mismarked performance headmarks

It is the opinion of the IFI that H.R. 3000 will stop these practices and restore traceability, responsibility and accountability to all consumers of industrial fasteners. It will help rebuild a high level of confidence in engineering standards and the voluntary consensus system which has developed them. We urge prompt action on this bill.

Senator GORE. Thank you, Mr. Schiele, and I am going to assume, Senator Burns, that our next witness is Steven Schonholtz. We invite you to proceed at this time.

STATEMENT OF STEVEN R. SCHONHOLTZ, PRESIDENT, GARDENBOLT INTERNATIONAL CORP., REPRESENTING THE AMERICAN ASSOCIATION OF FASTENER IMPORTERS

Mr. SCHONHOLTZ. Thank you very much, sir.

My name is Steven Schonholtz, Co-Chairman of the American Association of Fastener Importers and President of Gardenbolt International Corp.

The American Association of Fastener Importers was formed in January 1989 by 16 of the United States' largest importers of general use fasteners. These 16 charter members represent hundreds of millions of dollars worth of fastener sales each year. Our customer base consists of thousands of distributors and jobbers in the United States.

Our association is in favor of creating guidelines through legislation or other means to provide additional quality assurance to eliminate potential product failures. We agree the conformity of critical fasteners to the specifications to which they are represented to be manufactured, whether produced domestically or by foreign entities, is of the utmost importance. This is an issue that should not be compromised.

On these points we support in principle the ideals set forth in H.R. 3000, the Fastener Quality Act. In fact, many of our members already follow product quality and certification procedures which the bill seeks to implement.

However, we feel that certain ambiguous definitions, mechanics and methodologies now proposed under H.R. 3000 need further clarification if the intent of the bill is to be fulfilled in the marketplace.

The major issue that affects how well the requirements of H.R. 3000 can be met within the marketplace has to do with the definition of a "critical fastener." The intent of the bill was to provide for inspection, testing and certification of fasteners used in critical applications.

It was understood that any enlargement of that intent to include common commercial items would be overkill, impractical to enforce and completely inflationary, yet this is precisely what has evolved.

The current revised definition of a critical fastener in H.R. 3000 is too broad in scope. By defining "fasteners" to include any fastener which "bears a grade identification marking required by a standard or specification," the bill now includes common commercial items such as mild steel hex bolts and not just high strength bolts as intended.

This change occurred when the members of the American Society of Testing and Materials voted to include grade A307 bolts as grade markable. A307 hex bolts are noncritical application fasteners that are made of the same material as carriage bolts, lag screws, grade 1 and 2 cap screws, low carbon threaded rods, machine screws, wood screws and finished hex nuts.

None of these items were previously covered or intended to be covered by H.R. 3000. We do not believe that A307 hex bolts or any of the aforementioned noncritical low carbon fasteners should be included in any bill.

Our association feels that this must be changed, or the positive effects of this legislation will be negated. If the definition is left to include, or potentially include, these common parts, then the bill presents the following problems:

1. Inflationary Impact on Consumers. By including common bolts, repackages and distributors who sell these common items for the home use market or light manufacturing purposes will be compelled to spend thousands of dollars more per year on compliance with this bill. The cost of this additional expense will be passed on to the consumer.

2. Accreditation Timeliness and Product Shortages. If noncritical fasteners find their way into this bill, then literally several hundred factories in over 40 countries would have to be approved. If they are not accredited in a timely manner, product shortages will occur, creating upward price pressures in the marketplace.

Most likely extensive delays will occur in the implementation date of any legislation covering critical application fasteners due to the magnitude of fasteners which now require accreditation.

A bill covering only critical high strength fasteners would impact substantially less factories in much fewer countries requiring accreditation.

3. Restraint of Trade. Many of the mild steel bolts not used in critical applications are imported from developing countries such as Poland, China, Yugoslavia, Mexico, India and Malaysia. These countries will have difficulty complying with an unnecessary strict accreditation process and thus will be unable to continue to export these common standard products to the United States.

Notwithstanding the final form of the bill with regard to critical and noncritical definition, there remains substantial burden relative to the implementation of compliance. The American manufacturing companies, as indicated today, can and will comply with this bill.

The overseas manufacturers can and will comply with this bill. The importers can and will comply with this bill and I am sure you will hear today that the large distributors can and will comply with this bill.

All of these groups are able to commit the resources, create the computer systems and hire the personnel required to trace lot numbers, retain records, expedite certificates and separate and or duplicate products in their inventories, all of this at a substantial annual expense.

However, the cost of compliance with many procedures included in this bill are unfair to the thousands of small jobbers and distributors who buy fasteners, and sometimes high strength fasteners, for common use.

We propose that only the original manufacturer or original importer be required to retain records and lot numbers ensuring compliance and traceability. If the small jobber or distributor wants documentation from his vendor, he can request it but should not

have to provide, maintain and pay for this information if his customer does not require it.

As for traceability to the critical sector, automotive, aerospace and heavy construction, the methods for quality assurance are already in place. The government now requires manufacturer's headmark registration for traceability on the items they buy. Purchasing agents are now requiring actual certificates of quality compliance with most every purchase. The history and performance of perspective vendors has become much more important in the procurement process.

In addition to the increase in user awareness programs, I would like to point out that there is dynamic action happening in the foreign fastener marketplace. Overseas factories want to register their headmarks to ensure traceability. Foreign suppliers are willingly providing chemical and physical certifications and quality compliance letters for their high strength fasteners.

The abundance of publicity coupled with the indictments of those few who were allegedly profiteering through misrepresentation of product has helped purge the problems and make the current marketplace for fasteners a relatively safe one.

We sincerely believe that no one will sell or use a fastener that they believe will not work. It is inconceivable that given today's market awareness anyone would expose himself to a multi-million dollar product liability suit to sell a few hundred or a few thousand dollars worth of fasteners.

The passage of legislation on fasteners of critical application background should reinforce the real changes that have been taking place in the fastener marketplace these last two years and allow the honest importers, honest distributors and honest domestic manufacturers the chance to compete again.

In closing, my association proposes that the bill provide for the creation of a committee consisting of a cross-section of the fastener industry. All these separate groups would have a voice in keeping the Secretary up to date on commercial practices and compliance procedures and have a fair say in adding or deleting product coverage to the bill.

Thank you.

Senator GORE. Thank you very much.

Mr. Sullivan.

STATEMENT OF JOHN F. SULLIVAN, PRESIDENT, ACCURATE FASTENERS INC., ON BEHALF OF THE NATIONAL FASTENER DISTRIBUTORS ASSOCIATION, AND FASTENER INDUSTRY COALITION

Mr. SULLIVAN. Mr. Chairman and Mr. Burns, the National Fastener Distributors Association and the Fastener Industry Coalition appreciate the opportunity to submit comments concerning H.R. 3000, the Fastener Quality Act.

My name is John F. Sullivan, President of Accurate Fasteners in Boston, Massachusetts. Today I represent both the National Fastener Distributors Association and the Fastener Industry Coalition. Every segment of the industry, manufacturers, importers and distributors, have representation in each of these organizations. Over

5,000 companies throughout the United States employing tens of thousands of people will be directly affected by this bill. We support it as it stands today.

As a fastener distributor organization, we would prefer to minimize government regulation of our industry. For years we have been aware of the abuses and problems created by a few unscrupulous individuals. We are not sure that laws and regulations will eliminate the source of these problems, but we do recognize the need for a bill that will address them.

We have worked extensively with representative Dingell's House Committee over the past year to help formulate fair and effective legislation to address these needs. H.R. 3000 is a product of this work. It is designed to eliminate the flow of substandard fasteners into the marketplace for use in critical applications here in the United States.

During the bill's development, the following points kept emerging as critical to sound legislation:

One, critical applications. It became apparent that we should regulate all high strength bolting used in the United States and should not be concerned with those fasteners of a lesser strength used in everyday noncritical applications. For example, a high strength bolt used in a jet engine would be considered critical and would be included in the legislation; however, a common screw used in your kitchen table would not be covered.

Two, testing and certification. Since only high strength bolting should be covered, testing and certification would be required and would in turn ensure that only certified product would be available for critical applications in the marketplace. Trace numbers on each lot of high strength fasteners would guarantee the end user of compliance with the law. This testing process must be applied to all lots without exception.

Three, ability to add critical items. This bill should be designed so that any new products or materials which were developed or found to be suitable for critical application could be added to the list of items covered by this legislation at any time.

Four, emergency situations. A provision should be made for emergency situations where a few fasteners are required to keep a production line going or to repair a critical piece of machinery. This provision would allow for a maximum of 50 fasteners to be produced and shipped in a matter of hours where the testing required could take several days. These small lots would not be exempt from the testing requirements. They would only be given a little extra time for the certified paperwork to follow.

These points just mentioned serve as the basis of our thinking and provide a firm foundation for the legislation described in H.R. 3000.

As I stated at the beginning of my testimony, the NFDA and the Fastener Coalition support H.R. 3000 as it is currently drafted. However, if a rewrite or other refinements are undertaken, we feel that there are three points that would better make this a more equitable piece of legislation:

One, in the text, page 16, line 14, referring to alterations, remove through-hardening by heat treatment as an acceptable alteration.

We feel all through-hardened products should be backed by certified lab tests.

Two, throughout the bill the definition of retail sales and retail consumers must be defined more precisely to reflect the intent of the original writers of the bill. The intent was to provide an exemption for hardware store sales to the home handyman and not for commercial users.

Three, ASTM A307A, eliminate ASTM A307A fasteners from coverage under this legislation. These fasteners are not high strength critical products and are manufactured to less stringent strength specifications. In fact, they are the lowest strength steel bolts available on the market.

In closing, Mr. Chairman, I would like to impress on you the far-reaching effects that this bill will have on our industry. We are very specialized, and the changing of one word could adversely affect us to a far greater degree than you or your fellow committee members may realize. I ask, therefore, that we be allowed to continue to participate if any changes are made in the legislation which is now in front of you.

I thank you for allowing me this opportunity to express our opinions, and I will be very happy to answer any questions you might have.

Senator GORE. Let me thank you and interject this comment. We will certainly consult with you and your organization and the others present at the witness table in considering any changes we make to the legislation.

Let me reaffirm that Senator Hollings and I support the legislation and its principal thrust, and we are quite aware that any changes need to be undertaken very carefully. We intend to consult closely with the industry and with other concerned parties in making those changes.

Mr. SULLIVAN. Thank you, Senator.

Senator GORE. Our final witness on this panel and our final witness of the day is Mr. Donald Keil, Assistant Director of Quality for Caterpillar.

We are delighted to have you here. Please proceed.

STATEMENT OF DONALD KEIL, ASSISTANT DIRECTOR OF QUALITY, CATERPILLAR INC.

Mr. KEIL. Thank you, Mr. Chairman, Mr. Burns. I am Donald Keil, Assistant Director of Quality at Caterpillar Incorporated, and I am pleased to have this opportunity to comment on H.R. 3000, the Fastener Quality Act of 1989.

Caterpillar Incorporated, headquartered in Peoria, Illinois, is one of America's largest exporting companies. We design, manufacture and market earthmoving construction equipment, material handling products and engines, diesel, natural gas and turbine.

Caterpillar products are manufactured in 17 plants in this country and in 15 facilities outside the United States. 219 dealers around the world sell and support our product line of over 300 models, about twice as many as we had in 1984.

Caterpillar is a major user of critical high strength fasteners. Their applications range from the undercarriage track found in our

186,000 pound bulldozer to bolts used in our heavy duty diesel engines. Almost 95 percent of these fasteners would fall within the scope of the pending legislation.

In 1988, Caterpillar used over 250 million fasteners in our U.S. facilities, representing about 3,000 individual part numbers. Over 85 percent of these fasteners are produced by Caterpillar certified suppliers or at our own manufacturing facilities. Because of the importance of fasteners and other components to the integrity of our products, Caterpillar initiated a comprehensive supplier certification program in 1979 which includes detailed testing requirements for raw materials, in-process manufacturing systems and controls, and final inspection of the product prior to delivery. Together, these elements provide us with a high level of quality-assured fasteners.

One of the elements of this program is the ability to trace parts from the manufacturer to the assembly line or to repackaging. Repackaging of these parts for distribution to our dealer network, which may include commingling of lots, should not be prohibited since fastener integrity already has been assured by our quality certification program.

While we support the goals of this legislation, we are concerned about its impact on product manufacturers such as Caterpillar who purchase and use high strength fasteners either for the assembly or service of their own products.

The legislation would require companies such as Caterpillar to provide certified traceability in the same manner as parts distributors or brokers who have neither invested the time nor technical resources to develop quality assurance programs and who do not have the same vested interest in product quality.

As a major U.S. exporter, it is critical to us that our products be competitive. The competitive impact of this legislation is of great concern to us. Requirements to separate lots of fasteners produced to our specifications coupled with additional paper certification will add to administrative costs, which translates into higher product costs, costs not incurred by our overseas competitors. These additive costs will not enhance the value of our product nor make that product any safer.

To address these concerns, Caterpillar recommends that the committee consider the following three things:

One, limiting the traceability requirements for companies with disciplined quality assurance programs in place who manufacture or purchase fasteners for their own product use;

Two, redefining a private label distributor as one who provides fasteners primarily for other than his own production or service needs; and

Three, permitting the commingling of fasteners for repackaging/distribution purposes by product users for internal distribution or sale to the dealers.

We believe these changes balance the goal of restricting the use of nonconforming fasteners with the need to minimize administrative and production costs for those manufacturers with disciplined quality assurance programs already in place.

Thank you, Mr. Chairman, for this opportunity to share our comments on this important piece of legislation.

[The following information was subsequently received for the record:]

QUESTIONS OF THE COMMITTEE AND THE ANSWERS

Senator GORE. How many companies like Caterpillar have programs, if not as good as yours, then good enough to meet your definition of this phrase "disciplined quality assurance program"?

Mr. KEIL. The term "disciplined quality assurance program" means a supplier certification program capable of guaranteeing the quality of all critical product features, coupled with the necessary technical validation of the program to assure compliance and implementation.

I've asked the American Society of Quality Control and the Automotive Industry Action Group to consider how many companies have such programs in place. While no specific compilation exists, such programs are widespread in the automotive industry. All three domestic automobile manufacturers, and most of the importers, have strong quality assurance programs. And many suppliers to the industry, including TRW, Borg Warner, Dana and Federal Mogul, have such programs in place.

In addition, companies such as Deere and Company, Navistar International, Cummins Engine Company, Harley Davidson, Peterbilt, J. I. Case, and Detroit Diesel also have comprehensive quality assurance programs.

Senator BURNS. Will this legislation increase the cost of the machine that you are making?

Mr. KEIL. While it's difficult to quantify increased product costs resulting from this legislation, we estimate that restrictions on commingling of lots and extra storage space to maintain lot integrity throughout our distribution chain would require an expenditure of $8-11 million to implement and approximately $1 million per year in administrative and manufacturing costs.

Senator GORE. Thank you very much, and thanks to all of our witnesses on this panel.

Let me ask a few questions and then recognize Senator Burns.

First of all, Mr. Schiele, all of us know that no amount of testing and certification can stop every company that is bent on fraudulently selling inferior parts. That is why criminal prosecutions must always remain part of our efforts to safeguard safety and reliability.

I gather that you and your Industrial Fasteners Institute believe that H.R. 3000 is good legislation and that the testing and certification programs it would establish could play an important and beneficial role.

Can you tell us in some more detail why you believe this bill could help solve the problem? What is it about improved testing and certification that can reduce this problem of substandard and counterfeit parts?

Mr. SCHIELE. I think, Senator, to answer the question most simply, the standards and the test procedures are in place right now. What accredited labs would do would be to make sure that all laboratories are testing according to the rules, that those laboratories are checked and that they are certified to be performing their tasks within the standards that are set.

There is no rule for labs now. There are testing rules, rules by which both are tested, but no rules under which labs are established and under which labs operate. We run a laboratory at St. Louis Screw and Bolt to test the products we make. We are perfectly satisfied, or I would not be here today, that our laboratory functions within the guidelines and follows the ASTM testing procedures.

I personally, representing our company, feel a lot better knowing that an agency has said your lab is accredited. So I think if we can

take our small case and simply extend it and project it among all of the labs in the fastener companies in the United States and elsewhere and among the independent labs, if there is one set of rules under which they all must function that would assure standardization in testing and in accrediting those laboratories.

Senator GORE. What about traceability? Will that, in your view, deter the substitution of substandard parts as well as increase the buyer's confidence that what he has in his hand is actually what he intended to purchase?

Mr. SCHIELE. Yes. Really, when you come down to the key elements of the bill, one of the things that the bill is really trying to do aside from the criminal prosecution end of it is attempt to establish certification that simply says that the parts that are made are made according to the standard and, when that has been accomplished, a notarized certification attests to that and that the material used in the manufacture of the fastener and so stipulated on the certification is traceable to an original heat lot of steel. That is part of the traceability process.

I think it is the whole guts. It is the whole basis of what the bill is really all about. Would it eliminate some of the problems that have occurred? Not as long as we have circumvention of the rules. I think this is one of those things that all of us have to understand.

You can almost equate it, Senator, in a way to the problem with drugs. We have drug laws. That does not stop people from circumventing those laws. By the same token, I think there will always be an element of those who wish to circumvent this particular law should it become law; but I think it will greatly reduce—and I cannot give a percentage but maybe by 80 to 90 percent—the amount of violations that have been uncovered just in the last three or four years.

Yes, I think it sends out a signal. It will be a very strong deterrent.

Senator GORE. Let me turn back to accreditation just for a minute. One issue we have discussed here is the question of whether NIST should directly accredit the laboratories which test and certify fasteners or whether NIST ought to be directed to select a private accreditation group who in turn would accredit private testing labs.

Do you or your institute have any position on this question? Does either approach, in your judgment, offer greater confidence or more convenience and/or ease of operation?

Mr. SCHIELE. My own feeling, which is the only one I am going to give, is that the body that is assigned to do this should be the one that can do it in the most expeditious manner. The reason I say this is that I see a lot of time being involved among a very small body that would be given the job of accrediting labs. I think there would be a big stringout here. I think it would take a long time.

So I hope, Senator, that I am not straddling the issue, and I am going to have to speak from my own point of view here. I feel that the most expeditious way for that to be accomplished is the way that it should be done. I am going to ask Charles Wilson to give the straight industry point of view on this one.

Mr. WILSON. I think, Senator, we fully support the concept that is now in the bill which would allow what we might describe as a

partnership between the national standardizing group, the National Bureau of Standards, and those private groups which it would determine are capable of doing that.

I think the Independent Council of Testing Laboratories, we have had some contact with them. In fact, we are working closely to prepare a standard which can be used to accredit to third parties, to use for third-party accreditation of fastener testing laboratories.

Senator GORE. All right, thank you.

Mr. Schonholtz, I think it is safe to say the vast majority of fastener importers are honest quality businesspeople, yet we frequently hear that most of the substandard and counterfeit fasteners sold in this country do come from abroad.

Do you believe this characterization is accurate and fair? Do in fact most of the problem fasteners come from overseas? If so, from which companies or types of producers are they most likely to come?

Mr. SCHONHOLTZ. We believe that that statement is exaggerated.

Senator GORE. Is it substantially accurate?

Mr. SCHONHOLTZ. I do not have the statistics on that, but within our group, which is 16 of the largest importers, none of us have ever had a product liability claim against us settled or brought against us for the reason that the fastener had failed.

Our group works with the overseas manufacturers to ensure product quality and quality assurance. To back up that point, Customs has an ongoing investigation right now and currently is checking material as it is coming to the pier. Our groups report that our fasteners have been checked at the pier, have been sent out to independent laboratories, have been tested and been returned to the importer of record to be sold in the marketplace.

So I believe that that is exaggerated.

I also believe that——

Senator GORE. Okay. Let me interrupt you there. Let us stipulate for the moment just for purposes of this discussion that the 16 companies you represent have a clean bill of health. The question is not aimed at your 16 companies.

In general, do most of the problem fasteners come from overseas?

Mr. SCHONHOLTZ. The problem fasteners or counterfeit fasteners. There might be a differentiation.

Senator GORE. Do most of them come from overseas?

Mr. SCHONHOLTZ. I do not know. I really cannot answer that question. My feeling was that in reading the oversight committee's views, they felt that those problems were both domestic and imported.

Senator GORE. But you do not have an opinion on whether or not the problem is more with——

Mr. SCHONHOLTZ. I believe it has been presented that way, sir.

Senator GORE. But you are unsure whether that is accurate?

Mr. SCHONHOLTZ. No, sir.

Senator GORE. How widespread do you think the problem of substandard imported fasteners is?

Mr. SCHONHOLTZ. I believe that it was a problem and, as Mr. Dingell pointed out, there are a few bad apples or scoundrels, as he said, that were selling that product in the marketplace. I believe it has really hurt our industry as a whole as well as the importers

themselves, the honest importers who have worked with the overseas factories to create a safe environment for these products. So I believe it has been a problem, sir.

Senator GORE. You also argued that the Director of NIST should be required to set guidelines under which foreign labs and factories can be accredited by their own governments to provide the necessary testing and certification of foreign-made fasteners. This is an area that is new to us on this committee, and I would like to ask you about it.

Can you give us any examples where NIST or one of the private accreditation organizations has in fact accredited a foreign lab to perform this kind of test and certification? To the best of your knowledge, has this kind of arrangement worked well in practice?

Mr. SCHONHOLTZ. I do not think that there has been a standard set up for accreditation of laboratories overseas.

I do believe that through these discussions and through these various hearings it has come to the point overseas that factories want to be accredited, and if these are the rules that we present they are more than willing to allow accreditation by whomever we decide to go over there and accredit their laboratories.

Senator GORE. How could we design and operate a foreign lab accreditation program so that both Federal agencies and private U.S. companies could be confident that the certification was done to high standards and that the resulting fasteners were not tampered with before they entered the United States?

Mr. SCHONHOLTZ. Probably through consistent auditing of the process that has been in place, consistent checking of the material as it is being brought in as it is being done, and really follow through from whatever procedures are presented over there.

Senator GORE. Now both you and the House sponsors of H.R. 3000 have emphasized the value of being able to trace the origin of particular fasteners. As I understand the argument, requiring manufacturers' markings on fasteners and keeping a clear record of where they were made and tested would deter those who seek to sell substandard fasteners.

Do I understand this process correctly? Would traceability in fact make it harder to substitute substandard or counterfeit fasteners for the real article and, therefore, serve as a deterrence to the unscrupulous?

Mr. SCHONHOLTZ. We believe so, sir.

Senator GORE. Now Mr. Sullivan and Mr. Keil, I have questions for you, but I am going to wait to ask them on my second round.

At this point I want to recognize Senator Burns.

Senator BURNS. Thank you, Mr. Chairman. It will not take me very long.

Mr. Schiele, I gather from your testimony, even though you are a strong supporter of H.R. 3000, you are saying that this bill should be designed to address certification of labs; is that right?

Mr. SCHIELE. Well, no. The bill really, sir, should be designed to see that bolts are properly certified and tested according to the rules, to the engineering standards and rules that have been in place for a long time.

Senator BURNS. As you went on, though, you said, well, maybe there are no standards for the laboratories; to get a testing laboratory recognized, there are no standards set up for those people.

Mr. SCHIELE. Well, there are——

Senator BURNS. You know, we have always said that we cannot legislate morals, and we cannot legislate integrity, either. No piece of legislation that we put before this Congress is going to make people more honest or increase the integrity in the industry if the people themselves do not accept it, if the industry does not accept it.

Mr. SCHIELE. Right. I think what I would like to infer there, sir, is that all laboratories are accredited in the same way so that if we test a bolt at St. Louis, everyone is assured that it is being tested in the same way that the same bolt would be tested in Cleveland, yes.

That was a good question. Thank you for letting me clarify my position on that.

Senator BURNS. I do not know whether you are a native of Missouri or not.

Mr. SCHIELE. I am, sir.

Senator BURNS. I am, too, and I did not want to let any of that Mississippi and Missouri River rub off on us here.

I want to ask Mr. Keil here, if I could—and I doubt if I am pronouncing it right.

Mr. KEIL. You hit it right on the head. That is exactly right.

Senator BURNS. You are recommending taking the prohibition against commingling out of the bill. Is that correct?

Mr. KEIL. Yes, sir.

Senator BURNS. Have you put a pencil to this thing? Will this legislation increase the cost of the machine that you are making?

Mr. KEIL. The way we look at this, there are two features of this bill that we would like to see fixed or fine tuned. Since you bring up the commingling aspect of it, let us talk about that first.

When we receive lots of material, we have a certified process that we go through, and we police it ourselves. We audit it through our own labs. Each of our plants has metallurgical labs so we can audit incoming material. We go to the manufacturer's place and audit him to see that what he says he is doing he is in fact doing.

When that material arrives to us, we have a lot of 50,000 bolts in this scenario, for example, we might use that in various plants and on various assembly lines.

Now each lot comes in with an MAR, Material Analysis Report, with it, and we audit against that in our labs. If it is not to our specification, the lots are rejected.

Let us assume that this material comes in as to the spec. As we fill our assembly lines at night for the next day's shift of operation, there were some bolts left in a bin, and now we are going to take additional bolts and put them in that bin. All are certified, but now we cannot commingle these because they are from different lots. They may be from the same actual original lot but you cannot put 50,000 bolts in one bin. So it is the mechanics here in the description that makes it difficult to work with.

We are certified. We can trace fasteners from the manufacturer up to the point of usage or to the point of packaging for our parts distribution area. We find no problem with that. The problem is

the paper trail that we would have to have in the parts area if we sent 100 bolts to our parts distribution area and a fellow came in and wanted to buy two bolts, we would have to give him a certificate with it.

That is adding cost, and it is redundant. It does nothing to the bolt's safety. We have already assured that back at the point of receipt. To follow that paper trail all the way through, we believe is redundant. So we believe we should be able to commingle lots.

Senator BURNS. I would invite anyone on the panel to address this. You could put a stamp on a bolt; you could put a logo on it. We know right now that there are folks other than the Rolex Watch Company making Rolexes. With this legislation, will we be giving the final user of these products some false security?

Mr. KEIL. Well, you know, you asked the question earlier this morning of Mr. Dingell, and, I believe he did not answer it.

When we work with a bolt supplier, all of our high strength bolt suppliers are certified. We have two types of strengths. We have what we call heat treated bolts, high strength, and then we have ultra high strength bolts. Each of these have different headmarkings, radial stamps, six radial dashes on a grade 8 bolt. Ultra high strength has seven dashes on the head. We have our Cat logo, and we have the supplier's logo or his symbol on there.

We audit that bolt at the manufacturer's source as well as when lots come into our facilities where we built our product. Samples are taken verified. If somebody wants to slip us one, they might; but if the whole lot was this way, we would catch this.

I cannot understand why such a large amount of bolts are used without checking them. We do not do that, and I am surprised that other people do.

Senator BURNS. But in the final analysis, this legislation might add a little bit of cost to a machine. Is that a correct analysis?

Mr. KEIL. The paper trail would add additional cost to us because if we have to certify small lots going to our dealers through our parts system, that would add people and equipment to make certificates and notary publics, out there at the point of distribution as I understand the bill. We are not for that. That adds costs. It does nothing to the product.

Senator BURNS. Thank you very much. I appreciate it. That ends my questions, and if I may be excused I will go to another meeting.

Senator GORE. No, I am sorry. You have to stay.

Senator BURNS. Thank you gentlemen very much. I have learned much more today than you have learned from us, I guarantee. I appreciate your testimony. Thank you very much.

Senator GORE. Thank you, Senator Burns.

I have only a few more questions, and then we will conclude today's hearing.

Mr. Keil, let me pick up where Senator Burns left off on his questions there.

I see from your statement that over 85 percent of the fasteners that Caterpillar buys are produced by Caterpillar-certified suppliers or at your own manufacturing facilities, so I would like to learn a little bit more about your company's certification process.

You have referred to it, but what is the process that you use to certify a supplier company? What is involved in the way of inspections, audits, training or other activities?

Mr. KEIL. It is the same for any commodity, not just fasteners. Whatever we are going to certify a supplier for, it is the same process.

First of all, when we decide we are going to certify a particular supplier for a commodity, the purchasing people, the engineering people, the quality people, sometimes the manufacturing people, form a team in the plant. They meet with the supplier, and the first thing we give him is a booklet that describes how we are going to treat each other and what the requirements are from Caterpillar.

Sometimes a supplier says you require too much and it is going to cost too much, and we are not going to get involved with you. That is fine. We will go to someone else.

If we get past that gate, then we do an audit, a physical audit of the supplier's facilities, his process controls, his organization, how he runs his business, what his conformance mechanics are in house, his data retention. If it looks good and the price is right, then we decide to go into business.

When that happens, we actually make out a profile on the supplier. This is what a profile looks like. It is made in great detail. The reason we have a profile is because we have many facilities doing this, and this is a check sheet that forces continuity or consistency.

If the profile rating is satisfactory, he is quality approved to continue to do business with us. We force every supplier to build a quality plan. This is a nine-page document, a guide that says these are the things we want you to run process control on and report back to us. This happens to be the quality plan from Fontana Luigi.

Every supplier provides one of these. We work with them to develop it. All the control points are in there that we audit, and we do audit them. In fact, every supplier is recertified annually, but he is not recertified unless we go back and look to see if the things he said he is doing he is in fact still doing. It is a police action on our part.

When the quality plan is in place, if he has a good rating on the profile and we see no reason why we should not do business, then he submits samples to us and we do a metallurgical check, dimensional check, whatever is required, sometimes a functional requirement. Sometimes this part might meet all the functional requirements but there is something such as it must operate at 40 below zero, in the mud or whatever. That has to be on the print.

The supplier has to have in place the same checking requirements that we specify, and he must have some frequency of usage.

Assuming that his sample was okay, then we engage in production lot issuance and issue a purchase order. It takes two to three years to certify a supplier. We maintain a running history for at least a year on the supplier. If in that period of time he has a good track record without any glitches or hiccups, then the certification team recommends to the directors of the company (the quality and logistics directors), that this supplier be certified.

If there are multi-plant usages of this material, before that happens, we contact the other plants to see if they have had any problems. If there are no problems and there is unanimity in the decision, the nomination is brought before the quality director in the company.

At that point we have an okay or a disagreement. If it is an okay we order a certification plaque. The plaque is then presented by the team to the CEO and other members, usually the union people, out in the factory at a ceremony for certification.

Again, the recertification is done annually. This is the program we use to discipline the consistency in the product we buy, regardless of whether it is fasteners or seats or what have you.

Senator GORE. That is pretty impressive. If you all could exercise that kind of quality assurance with fiscal and monetary policy, you could really be in business worldwide. If we could just have Congress stop borrowing $400 million a day and if the Federal Reserve had a dollar that made you competitive, then you all would really be in business.

Are you satisfied that the reliability of fasteners from this certification program that you have has produced extremely high quality products from your suppliers?

Mr. KEIL. Yes, sir. It has to date.

Senator GORE. Now in your written statement you recommend that we limit the bill's requirements for those companies with disciplined quality assurance programs already in place and who manufacture or purchase fasteners for their own product use.

How would you define this phrase "disciplined quality assurance program", and who would you recommend to make the judgment as to whether a particular company does or does not meet that standard?

Mr. KEIL. I have heard the phrase "certification labs". We are not opposed to certification labs if that is what it comes to. I am sure that we would be equivalent to any certification lab within our own prime product facilities as well. Each one has a complete laboratory for all chemical testing and physicals.

I think whatever the certification is, it ought to be competitive. It ought to be somebody who is competent and not going to charge an arm and a leg.

Senator GORE. Can you give us an approximate estimate of how many American companies you believe would meet your definition of disciplined quality assurance program and how many would therefore be exempt from H.R. 3000's overall requirements if the provision you suggest is included in the bill?

Mr. KEIL. Well, sir, I do not know that. I know that we buy fasteners from 13 certified suppliers today.

Senator GORE. No, no, no. I am not asking that question. I am asking how many companies like Caterpillar have programs, if not as good as yours, then good enough to meet your definition of this phrase "disciplined quality assurance program"?

Mr. KEIL. I know that Deere and Case do and other people in our industry. They have got similar programs, we think not as good as ours.

Senator GORE. I was wondering if you were going to let that sit there like that?

Mr. KEIL. No.

There is good competition out there, and they all have programs.

Senator GORE. Well, when you say they have all got programs, how many companies? And you can provide your estimate for the record if you would like, but I am trying to get an idea of how many companies would be exempted from the bill if we adopted your provision?

Mr. KEIL. Sir, I would not have any way of knowing that. I really do not.

Senator GORE. Well, if you do not mind asking your people to take a look at that and give us an estimate for the record, we would appreciate that.

Mr. KEIL. All right, sir.

Senator GORE. Thank you very much.

Now, Mr. Sullivan, as I understand the process, distribution companies like yours buy fasteners from manufacturers and, in turn, sell them to end-users.

What I would like to know now is where you think the major problems with substitution and counterfeiting occur. To what degree are the problems we have heard about today the result of manufacturers selling substandard parts to distributors, who then unknowingly sell what they think are honest products?

And how much does the problem lie with a few unethical distributors who, themselves, substitute inferior products? Where does the real problem lie in this situation?

Mr. SULLIVAN. I believe the real problem lies with the distributor that was importing directly for himself from overseas. He was buying an inferior product on purpose and then selling it.

The great majority of products that we buy from domestic manufacturers—I would not say the great—I would say our own personal view is that everything we have bought from domestic manufacturers and importers has been fine. But there have been a few bad apples that have contracted directly with overseas manufacturers to make products to their own specifications, put a false headmarking on them, and sell them in competition with me, where I could not be competitive.

Senator GORE. Well, now, in your view, will the testing and certification requirements in H.R. 3000 reduce problems at both the manufacturing and distribution stages?

Mr. SULLIVAN. Absolutely.

Senator GORE. All right.

Now, we have heard quite a bit of discussion this morning about the importance of testing and the kind of testing program that would be created under H.R. 3000. As I understand the process, each lot of fasteners would be tested in order to ensure that these fasteners meet the specified standards.

What I would now like to do is ask you how this process would work in practice. How large, for example, is a typical group or lot of fasteners?

We had a little discussion of this earlier, but how many individual bolts or other fasteners are actually tested during the certification procedure? How much time is involved in testing a group of fasteners? And what kind of equipment and personnel are typically required?

Mr. SULLIVAN. You have asked a whole mouthful.

Senator GORE. Well, I can go back over them one by one if you want.

Mr. SULLIVAN. No, what I am really getting at is that a fastener can be anything that is holding your watch together up to something the size of this table practically. So a lot is very difficult to give you a single figure for any lot of fasteners.

I believe, H.R. 3000, it came up to be a 250,000 piece maximum. It has to be one heat, one lot, manufactured at one time, tested at the same time. That is what a lot is. And the quantity, I believe, is a maximum of 250,000 pieces, which you can have very easily in a small nut, bolt, washer or screw.

That would be given a trace number and that would follow through all the way; which should eliminate 99 percent of our problems.

Now, I would be remiss if I did not say that the distributor in this situation is going to bear the brunt of the cost. The great majority of manufacturers now test their product. And they are making lots of 100,000, 200,000 or 300,000, so the cost is very negligible.

A distributor is going to have to keep all his lots separate with the tracing number; he cannot commingle anything, which we are for. But it is going to cost your average distributor about $65,000 a year to implement the real rules of this. And we are in favor of it.

Senator GORE. Mr. Keil, you wanted to comment on this question.

Mr. KEIL. This commingling thing, if you just stop and look at it from a practical standpoint. If you can just put yourself out on an assembly line for a moment. Have you ever been on an assembly line?

Senator GORE. Yes, sure.

Mr. KEIL. All right. You are on an assembly line and you have got trays of bolts—bins of bolts. And if we are compelled to keep individual lots identified as they come into the plant, to keep those separate despite the same part number, I wonder how many part number bins of the same part number we would have on an assembly line just to keep the lots separate.

Senator GORE. I am not sure you are reading the provisions of the bill correctly. I do not think it would require——

Mr. SULLIVAN. I agree with you, sir. The commingling, I believe, is from the manufacturer to the distributor, to the OEM. Once he gets it in his plant, what he does with it is his business.

Senator GORE. Yes, that is my reading of it. Maybe that takes care of all of your problems, Mr. Keil.

Mr. KEIL. Well, if that is made clear then, we would feel much better. But somebody has got to write that in there.

Senator GORE. Great. Okay, well, we can certainly clarify that.

Mr. KEIL. Clarify it, please.

Senator GORE. And I am given to believe that that is the intent of Chairman Dingell and Chairman Roe in their drafting of the bill.

Mr. KEIL. All right.

Senator GORE. So we will certainly make that clear. Would that ease your mind on a lot of the criticisms you have had?

Mr. KEIL. Yes, sir.

Senator GORE. Good.

Mr. KEIL. But what about the distribution process out into our parts area? The same thing would apply. We would take various lots going into our parts distribution area, if we can commingle those and put them in the same bin, then that helps us.

Mr. SULLIVAN. I believe that they could put those in the same bin if they had a single trace number on that package. That one trace number would then come back and tell them all the other part numbers that were in it. And so they would have their trace number.

Now, he said earlier that he was going to have to give certification to every one. He does not. All he has to do is have a trace number on his package, period.

Senator GORE. Well, I think it is real good to clarify this in open hearing. And we will work with you, Mr. Keil, in further considering this bill. And if we need to clarify that point in the language of the bill or the language of the report, we will certainly do that.

Mr. KEIL. Thank you, sir.

Senator GORE. Because I think it is important to take a real close look at where the rubber meets the road and make sure that it does not complicate your task, but rather facilitates the achievement of the high quality that your customers depend on and that you are giving them and that other companies need to give if we are going to become more competitive in the world, and avoid these horrible problems that Chairman Dingell's committee has outlined in such extensive detail.

I think it has been a very useful hearing.

We will leave the record open, without objection, for statements from Chairman Roe and others to comment upon the bill and the testimony that we have had here today.

And as I mentioned earlier, we anticipate moving expeditiously on this legislation, soon after the first of the year. And we will consult closely with those of you who have been so kind to take the time to come here and consult with us and testify.

And I think we have clarified some matters here today. I think the committee has learned a lot about how we can fine tune the bill.

And, in closing, let me assert again that we are bound and determined to move forward and address this problem. And we appreciate everybody helping us in that task.

The hearing stands adjourned.

[Whereupon, at 12:04 p.m., the hearing was adjourned.]

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

STATEMENT OF
HON. ROBERT A. ROE (D-NJ)
BEFORE THE
SENATE SUBCOMMITTEE ON
SCIENCE TECHNOLOGY AND SPACE

November 20, 1989

I want to thank Chairman Gore and the other members of the Subcommittee for holding this hearing on this vitally important matter of defective fasteners. This problem continues to adversely affect the public safety and also threatens to further damage our economy if it becomes pervasive throughout our industries.

The Fastener Quality Act is the result of the hard work of the members of the House of Representatives' Committees on Science, Space, and Technology and Energy and Commerce. The committees have found that counterfeit and substandard metal fasteners, produced both in the United States and abroad, have penetrated U.S. industry, creating an enormous national safety and quality problems. This important piece of legislation will increase the confidence of builders, manufacturers, and consumers that defective bolts have been purged from the sources of supply and will no longer be a threat to safety.

During hearings this Congress and last, the Committee learned that the United States uses billions of fasteners in buildings, powerplants, bridges, motor vehicles, airplanes, and other equipment each year. High strength bolts are used by the military, the space program, and private industry. Unfortunately, our markets have been awash with counterfeit and substandard fasteners that have failed in critical applications. It is only a miracle that more lives had not been lost prior to the discovery of the problem. The diligence of our military and industry in replacing the substandard fasteners deserves credit for preventing additional failures.

In 1988 NASA discovered that false certifications had been made for hardware the agency procured and was forced to impound thousands of bolts and conduct an extensive audit of the fastener quality of the space shuttle program. Additionally, NASA has found broken and deformed rings that hold solid rocket boosters on the space shuttle's external fuel tank.

In 1987 an ironworker in Tennessee, lost his balance while tightening a faulty, imported bolt on the structural steel of a new plant, and fell to his death as he missed the safety net. The bolt was determined to be faulty when subjected to laboratory testing. Such testing should have taken place prior to shipment.

In 1987 a Louisiana Department of Transportation maintenance crew discovered that the heads of bolts had broken off in expansion joints on a bridge on Interstate 10 over the Calcasieu River in Lake Charles, Louisiana. When these bolts were tested by an independent laboratory it was found that they did not conform to the specifications, and documentation was not available to confirm the source or quality of the bolts used in the bridge construction.

The Defense Department has had enormous problems in equipment failures, repairs, and replacement of inventory to purge its fastener supplies of counterfeit and substandard bolts. Seventy-five percent of the 1,000 Hum-V's at Fort Ord in California were found to have loose bolts in the upper ball joints of their front wheel assembly; and carrier bolts holding the shoes of the track on an M-60A3 tank failed, disabling the tank. Substandard fasteners were sold to the Navy for use on submarines and aircraft carrier jet catapult systems.

There have been criminal investigations and indictments to enforce the present laws on defrauding the government. The Customs Service and the Defense Criminal Investigation Service executed eleven search warrants in late June of this year. The warrants were carried out in four states against distributors and importers of fasteners alleged to be counterfeit and mismarked. A U.S. company and a Japanese manufacturer were indicted for selling thousands of substandard nuts and bolts to the Pentagon and to the Comanche Peak nuclear power plant.

In May of this year a federal grand jury indicted a California aerospace company on charges of selling substandard and defective bolts to NASA for use on the space shuttle. The indictment was for 34 counts of fraud and filing false statements on a government contract. Analysis conducted at NASA's Marshall Space Flight Center in Huntsville, Alabama found that 15 percent of the bolts sold to NASA by this company did not meet specifications. Bolts certified to withstand 17,000 pounds per square inch failed at 15,000 pounds per square inch.

Unfortunately the present laws are not sufficient to deter the counterfeiters from flooding our markets with their substandard products. There are no standardized testing requirements, criminal penalties, or injunctive relief available to the private sector to protect against substandard fasteners. To assure themselves of quality sources of critical fasteners many companies have limited themselves to trusted suppliers and have had to resort to extensive receipt inspection and testing. This adds significantly to the cost of doing business and limits the competition in the marketplace.

H.R. 3000, which recently passed the House, was the result of a bipartisan effort in the House of Representatives. It is urgently needed to restore confidence to the market for quality products and to purge the counterfeiters from the ranks of the suppliers. The Fastener Quality Act provides for standardized testing of fasteners used in high strength or critical applications and injunctive relief and criminal penalties for those who continue to threaten the safety of our citizens.

The legislation also creates a partnership between Government and the private sector. It provides for: the adoption of voluntary standards that are formulated by industry consensus organizations; a tracking system to ensure tracability of fasteners; and the testing of all domestic and imported fasteners in accredited laboratories. The Congressional Budget Office has advised that this Act will result in no cost to Federal, State or local governments.

I urge you to consider this legislation favorably.

COMMENTS OF
R.H. CLAYTON, VICE PRESIDENT/GENERAL MANAGER
STELCO FASTENER AND FORGING COMPANY

BEFORE THE SENATE COMMERCE, SCIENCE AND TRANSPORTATION COMMITTEE
ON THE
FASTENER QUALITY ACT, H.R. 3000

The following comments regarding the Fastener Quality Act (the "Act"), H.R.3000, are submitted on behalf of Stelco Fastener and Forging Company ("Steffco"), which is the fastener and forging operation of Stelco Inc., Toronto, Canada. Stelco Inc. is one of Canada's largest integrated steel producers.

Steffco has been a major supplier of specialty fasteners to General Motors, Ford and Chrysler both in the United States and Canada for more than 25 years. In 1988, more than 95 percent of the 773,000,000 fasteners Steffco exported to the United States were shipped to the U.S. automotive industry. In the same year approximately 87 percent of Steffco's total output was shipped to automotive industry in Canada and the United States.

The significance of Steffco's shipments to the North American automotive industry is two-fold: 1) The North American auto industry has already established demanding quality standards for its fasteners; and 2) The effect of the 1965 United States-Canada Agreement Concerning Automotive Products ("the Agreement") and its U.S. implementing legislation, the Automotive Products Trade Act of 1965 ("APTA") has been to confer equivalent status on Canadian and U.S. suppliers. Thus, it is inappropriate to make a distinction between automobile fastener manufacturers of Canada and the United States as the Act proposes.

Steffco Meets Automotive Industry's Demand for Consistently High Quality, Defect-Free Fasteners

The automotive manufacturers have already established demanding standards of quality. In order to qualify as a supplier to these manufacturers, Steffco has had to comply with the exacting quality and testing standards of the manufacturers. The exemplary nature of Steffco's operation is reflected by the fact that both of Steffco's industrial fastener plants are certified "Q1" by the Ford Motor Company. This is Ford's highest supplier rating. To meet this standard, Steffco had to achieve a level of at least 85 out of 100 in a approval system which awards points for: process and quality control, continuous quality improvement, product testing, manufacturing engineering,

possession of design engineering and product development capability, and laboratory facilities.

General Motors and Chrysler hold similar views of Steffco's product quality inasmuch as these companies, as well as Ford, use its fasteners in all major applications: assembly, transmission and drive train, and in the extremely demanding engine plants. North American automotive manufacturers already require that Steffco be able to trace the origin and original heat of the steel it uses to produce fasteners designated by them as "auto critical" parts.

A distinctive feature of Steffco's automotive industry fasteners is that most are not standard, but are produced to blueprints and specifications supplied by the vehicle manufacturers and must meet the precise criteria developed by the manufacturers.

The Effect of the Agreement and the APTA

When the President of the United States and the Prime Minister of Canada concluded the Agreement, they laid the foundation of a "North American" motor vehicle industry. Under the Agreement and the APTA, Canadian and U.S. motor vehicle manufacturers view vehicle and parts suppliers on both sides of the border as "domestic" suppliers.

The effect of the Agreement has been to confer equal status on suppliers in Canada and the United States. Thus in transmitting the Agreement to Congress, President Johnson noted that "[t]he automotive producers of the United States and Canada make up a single great North American industry." The Agreement's intent was "full integration of the North American automobile industry." Letter from President Lyndon B. Johnson to House Speaker John W. McCormack, March 31, 1965, S. Rep 782, 89th Cong., 1st Sess., reprinted in 1965 U.S. Code, Cong. and Ad. News 3670,3671-72. This understanding of the Agreement was echoed by the Senate Finance Committee in its report accompanying the APTA. The Agreement "represents a joint decision by our two great nations to allow the development of a single unified North American automobile industry...." Id. at 3677.

Steffco actively supports the intent of the Act. However, the impact of the Act's requirement of providing original test certificates with each shipment would, in essence, duplicate requirements that the marketplace already requires and impose unreasonable and unjustifiable burdens on Canadian automotive fastener producers. The difference between the

written notice of testing and quality required of U.S. fastener producers and the submission of original test certificates required of foreign producers is significant because, as a staff member of the House Energy and Commerce Committee explained in a September 8, 1989 letter to the Industrial Fastener Institute (of which Steffco is a member):

> [t]he written notification [required to be provided by domestic producers] is not a test certificate. It is simply a written statement that the fasteners are from a lot that has been tested and certified in accordance with the law. It can be on the invoice or the packing slip. We to not want to create a paperwork nightmare by passing copies of the test certificate with each order.

In cases where Canadian automobile fastener producers such as Steffco already are meeting the stringent requirements of the automotive manufacturers, the Act's requirement of an original test certificate (as opposed to a written notification of compliance) for each shipment of a portion of a large production lot would result in a nightmare of paperwork and significantly degrade their ability to meet their customers' just-in-time delivery schedules. Thus, we request that the Act provide a mechanism that would permit qualified Canadian companies, such as Steffco, to provide a written notification under the Act for the fasteners which they supply to the automotive industry. Such an exemption could be easily defined for purposes of administration because it would comprise only fasteners that enter the United States under the duty-free provisions of the Agreement.

Conclusion

The marketplace already imposes on Steffco and other Canadian automotive fastener producers the testing and tracking requirements contemplated by the Act. Including these companies as foreign producers under the Act would needlessly reduce their efficiency and cost the companies hundreds of thousands of dollars a year. Such action on the part of the United States would not assist the goals of the Act and would constitute an unfair trade barrier. Failure to exempt Canadian automotive fastener manufacturers would undermine the intent of the Agreement and of the U.S.-Canada Free Trade Agreement both of which are intended to reduce, not increase, barriers to trade between the two countries.

November 17, 1989

Automotive Operations
Rockwell International Corporation
2135 West Maple Road
Troy, Michigan 48084

Rockwell International

November 28, 1989

The Honorable Ernest F. Hollings
Chairman
Committee on Commerce, Science
and Transportation
U.S. Senate
Washington, D. C. 20510

Dear Senator Hollings:

Rockwell International's Automotive Operations appreciates the opportunity to comment, for inclusion in the hearing record, to the Chairman of the Senate Committee on Commerce in regard to HR 3000, the Fastener Quality Act of 1989.

Rockwell's Automotive Operations (A.O.) headquartered in Troy, Michigan is one of eight business groups of Rockwell International. Our automotive businesses are among the world's leading producers of components for heavy and medium-duty trucks, buses, trailers and heavy-duty off-highway light trucks and passenger cars. Rockwell A.O. operates 44 automotive manufacturing facilities in 15 countries, principally in the United States, Brazil, Canada, England, France, Germany and Italy, employing 22,900 of the 91,700 employees of Rockwell International. In the United States, Rockwell A.O. has manufacturing facilities in Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Missouri, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee and Wisconsin.

There are thousands of fastener applications in Rockwell A.O. products. These applications encompass products such as heavy vehicle axles, transmissions, brakes, clutches and truck and automobile body systems. We also supply many of those fasteners in a variety of product service kits which we distribute through the OEM vehicle producers as well as authorized Rockwell A.O. service parts distributors.

Rockwell A.O. strongly supports the goals of HR 3000. Currently Rockwell A.O. utilizes comprehensive quality assurance procedures to assure the integrity of purchased fasteners. The implementation of the "Fastener Quality Act" will in many ways supplement our own quality assurance program. However, there are key provisions of this act which Rockwell A.O. feels will impose an unnecessary and costly hardship on product manufacturers such as Rockwell A.O. who purchase and use fasteners either for assembly or service of their own products.

Rockwell International

As we interpret the legislation, Rockwell A.O. and other product producers would be required to provide certified fastener traceability in the same manner as fastener manufacturers and fastener distributors. We believe the limitation on co-mingling of certified fastener lots if imposed on product producers will severely hamper our ability to distribute certified fasteners to sister Rockwell A.O. plants for manufacturing purposes as well as packaging certified fasteners in product service kits for shipment to OEMs for distribution to their dealers or for our own distribution to authorized Rockwell service parts distributors. The need to keep records of the breakdown of use in product manufacturing and service kit applications will create substantial, additional costs that will not make the products any safer while eroding the competitiveness of our domestic facilities in the global automotive manufacturing market.

Rockwell recommends that the Committee consider the following modifications to the proposed legislation:

1. Recognition within the legislation of product manufacturers, as opposed to fastener manufacturers and fastener distributors, by limiting traceability requirements for product manufacturers who will purchase the already certified fasteners for their own product manufacturing use and service of the product.

2. Permitting product manufacturers to co-mingle lots of certified fasteners for a) distribution within their manufacturing operation, b) for the use of fasteners in product service kits sold to vehicle manufacturers or c) to service parts distributors, again, for service of the product.

Rockwell requests the Committee's consideration of these modifications which should not jeopardize the goal of fastener quality assurance while also recognizing the need to minimize administrative and production costs for product manufacturers utilizing purchased, certified fasteners.

Rockwell Automotive Operations appreciates the opportunity to present our views on this important legislation and is available to the Committee or Committee staff to discuss our comments.

Sincerely,

Arthur P. Ronan
President

American Association For Laboratory Accreditation

December 20, 1989

Honorable Albert Gore
Committee on Commerce, Science and Transportation
United States Senate
566 Dirksen Senate Office Building
Washington, DC 20510

Dear Senator Gore:

During the November 20th hearing you chaired on H.R. 3000, Fastener Quality Act, there was some testimony that prompts me, as President of the American Association for Laboratory Accreditation (A2LA), to clarify the record. A copy of my biography is attached.

Background on A2LA

The Association is a nonprofit, nongovernmental, public service, membership society dedicated to the formal recognition of competent testing laboratories. We are organized in a manner similar to some of the "voluntary consensus standards organizations" such as ASTM, ASME, IFI, and SAE, identified in Section 12 (a)(2) of the Bill. We do not develop test methods, relying instead on methods promulgated by our sister societies or by government agencies. However, we do specify requirements for accrediting laboratories. The Association itself meets the requirements of the voluntary consensus standard, ASTM E 994 - 84, "Guide for Laboratory Accreditation Systems," and uses as a worldwide standard for accreditation, International Organization for Standardization (ISO) Guide 25 - 1982 "General Requirements for the Technical Competence of Testing Laboratories".

A Fact Sheet describing the Association is included as Enclosure 1. Our Board of Directors is made up of representatives from government, major industries, laboratories and the public interest. The Vice Chairman is a Department of Defense employee and other government representatives come from NIOSH and FDA, with an ex-officio member from EPA. The background on the development and status of the A2LA Metals Testing Laboratory Accreditation Program which applies to metal fasteners is provided as Enclosure 2.

As of December 20, 1989, we have accredited 200 laboratories in eight different fields of testing and we have an additional 50 laboratories in the process of being assessed. We have accredited laboratories in 34 states, Guam, and Canada. Of these laboratories, there are almost 30 which test fasteners. Many of these fastener laboratories have attained accreditation in anticipation of the passage of this legislation. Several more laboratories are enrolled for this purpose. The list of accredited fastener laboratories is provided as Enclosure 3. The requirements for accreditation are presented in the yellow and green booklets provided as Enclosure 4.

In addition to our substantial laboratory accreditation activity, we administer several courses on laboratory quality assurance (over 900 students have attended). We are members of many other relevant national

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groups, including the Department of Commerce's Industry Functional Advisory Committee (IFAC) on Standards and Certification, the ANSI Certification Committee, and the International Laboratory Accreditation Conference (ILAC). We are actively working on the establishment of international agreements with laboratory accreditation systems in Australia, Canada, Hong Kong, New Zealand, and the United Kingdom and have active communications with systems in six additional countries.

NIST Testimony

Our concerns focus on the written testimony as presented for NIST by Raymond G. Kammer, NIST's Acting Director. Specifically:

Page 2, Paragraph 2, Second Sentence

> "There are available two voluntary approaches to this problem: one, the National Voluntary Laboratory Accreditation Program (NVLAP) at NIST; the other, the private sector certification program developed by the American Society of Mechanical Engineers (ASME)."

This statement fails to recognize the A2LA program, which is already accrediting fastener testing laboratories (see Enclosures 2 and 3). NIST refuses to acknowledge A2LA's existence although NIST knows of its existence since we have had several informal meetings and communications with NIST staff and Mr. Kammer in particular in the last two years. Perhaps the reason for the NIST omission is that A2LA is a direct competitor of NVLAP.

NIST does recognize another sister professional society, ASME, but ASME's program intent is much broader than laboratory accreditation alone in that the proposal, as we understand it, includes the certification of manufacturers' products. Because this program is so different, it may not be considered by NIST as directly competitive.

Page 1, Paragraph 2, Third and Fourth Sentences

> "Specifically, the bill should be modified by deleting the requirement contained in Section 4 (a)(1)(C) that NIST accredit private entities which would in turn accredit laboratories that perform tests on fasteners."

By not requesting deletion of Section 4 (a)(1)(B) which includes the same kind of language as is in 4 (a)(1)(C) but for laboratory accreditation systems in other countries, NIST appears willing to recognize foreign national laboratory accreditation programs. Why not domestic programs as well? What is the difference? Perhaps here again the reason may be that foreign programs are not directly competitive.

First and Second Sentences, Paragraph 1 on Page 2

> "We object to requiring NIST to certify laboratory accreditation by private entities. This responsibility would compromise our traditional role as the Federal Government's independent "third party" technical investigator and advisor."

If NIST were to establish a program under NVLAP, it would no longer be an "independent 'third party' technical investigator and advisor." NIST would be a regulator of laboratories. On the other hand, the role of overseeing accreditors would be an appropriate role for NIST, more fitting of its traditional role of investigator and advisor. Furthermore, the role of overseeing laboratory accreditors is well recognized by Congress. For example, the Health Care Financing Administration recognizes seven professional societies, such as A2LA, for their accreditation of over 15,000 medical laboratories.

We respectively request the opportunity to present our views to the Committee at an early opportunity.

Sincerely,

John W. Locke

John W. Locke
President

STATEMENT OF MR. RICHARD MCFARLAND, DIRECTOR, VSE CORPORATION
AND MR. GEORGE P. "BUD" BROWN, PRESIDENT, BQA, (BROWN'S QUALITY ASSURANCE)
BEFORE THE COMMITTEE ON COMMERCE, UNITED STATES SENATE,
ON H. R. 3000, THE FASTENER QUALITY ACT.

Mr. Chairman and Members of the Committee:

We are pleased to have this opportunity to express our views on "The Fastener Quality Act," H. R. 3000. Mr. Brown and I each have in excess of 20 years experience in the field inspection, certification and quality control of critical material used in critical systems on board United States Navy submarines and surface ships.

Within the past few years, the defective fastener problem has received considerable attention throughout the United States Military and Industrial Complex. More recently, this problem was the center of discussion on one of the network morning programs on two separate occasions. These discussions centered on the potential problems that could be caused by defective fasteners in aircraft and their relevancy in accidents occurring in the recent past. Of major concern was the potential for future accidents which could be caused by defective fasteners which may have contaminated our entire distribution system. There was also considerable concern regarding the unknown number of defective fasteners that have been assembled into the numerous equipments within the Department of Defense as well as the construction industry and its associated heavy equipment. During these discussions two major questions went unanswered; (1) What is being done to remove the defective fasteners from our distribution system, and (2) What is being done to preclude it from reoccurring in the future?

The proposed Fastener Quality Act is a major step toward resolving the defective and counterfeit fastener problem, and the Congress is to be commended. In reviewing the proposed act and based on our many years of experience of controlling critical material for submarine and surface ship application, there are a few areas that might be strengthened in order to better control the problem. Based on our review, we would like to recommend and suggest that the following additional controls be considered:

1. Lot size is defined as material controlled by the same production process using the same heat or coil of material and submitted for inspection at the same time. Further, the Act states that the fastener container must be conspicuously marked with the "lot" from which the fasteners were taken. This results in a question as to who knows how many fasteners were shipped against each lot. Example: The producer has 100,000 fasteners from heat or coil No. 001. The producer has 100,000 fasteners sampled and accepts certification for the lot. All fasteners are marked with the appropriate "Grade Identification Marking" and the manufacturer's insignia. Each container is marked with the "lot" number. Each shipment is accompanied by an "original" certification. Accordingly, the manufacturer has complied with the requirements of the proposed act. However, the following potential problems exist:

What is to preclude the manufacturer or distributor from shipping additional quantities over and above the certified 100,000 fasteners? If audited, he can show the same heat or coil number and manufacturing process were used, each box was marked with the appropriate "lot" number, and an "original" certification was forwarded with each shipment. In fact, if the manufacturer

or distributor so desires, he can ship over and above the number certified and no one would know. In addition, the requirement for the "Original Certification" appears to be a problem. There is only one "original certification," and this should be retained by the manufacturer or distributor. Copies of the "original certification" should be used for forwarding with each shipment and also be used to help control the above problem.

RECOMMENDATION

To preclude the possibility of a manufacturer or distributor shipping quantities in excess of the certified lot size, the following is recommended:

The lot and size of the lot should be included on the request for certification to the laboratory. This would also assure that the proper size sample was selected and would be used as the control quantity for audit purposes. The laboratory certification back to the manufacturer or distributor would identify the lot size and the lot number. Each time the manufacturer or distributor ships against a given lot, the quantity shipped would be identified on the laboratory certification copy and subtracted from the quantity on the last report. A copy would be attached to the "original certification." This would facilitate periodic audits and would permit the auditor to review all sales of a given supplier's part number, identify the certification and lot number, and review the number shipped against the quantity procured. In addition, if the customer's name was included on the certification, it would facilitate recall of defective material should the need arise.

2. The Act addresses pulling samples to the applicable specification or standard and conducting necessary inspections and tests to assure compliance. It also addresses how to control the acceptable fasteners. What it does not address is how to control those lots which were rejected. It does not seem likely that a manufacturer or distributor with a large quantity of rejected fasteners will scrap them on his own. Required actions such as removing all markings from each fastener would render them unacceptable for further use in critical applications but would place an additional cost burden on the manufacturer or distributor which he would not likely do voluntarily. This would open the door for potential cheating.

RECOMMENDATION

It is recommended that the Act require that any lot of material failing to meet the certification and testing requirements be rejected and sent back to the manufacturer or distributor. A copy of the rejection with full supporting documentation should be forwarded to NIST. The manufacturer or distributor should be required to provide a report to NIST which would identify the cause of the defect and necessary corrective actions to preclude recurrence. As appropriate, NIST could investigate the corrective actions to assure compliance. One of two actions would be required for rejected fasteners; remove all markings and downgrade the fasteners for less critical use or destroy the entire lot. The decision should be reported to NIST by the manufacturer or distributor.

3. Records of inspection are required by the Act to be maintained for seven years by the Laboratories, Manufacturers, Importers, and Private Label

Distributors. No provisions have been made for the possibility that any of the above might go out of business, thereby losing all associated records.

RECOMMENDATION

It is recommended that the Act require the NIST be contacted for disposition instructions of all fastener certification records associated with this program prior to any of the above businesses stopping operations or the sale or transfer of ownership to a third party.

4. The Act provides for controlling fasteners from an effective date. It also states that this will not affect fasteners which are in stock. Further, it places full responsibility for control on the manufacturer or distributor but fails to impose any controls on the retailer or user. If nominal receipt inspection requirements were placed on the retailer or user, it would accomplish two things; (1) it would give some degree of assurance that the fasteners presently in stock, but outside the control of the Act, meet the minimum requirements of their applicable specification or standard, and (2) it would act as a control on all future lots to be provided to them. If this is not included in the Act, retailers and users will rely solely on the certification for acceptance of fasteners and, if at a later date defective material is discovered, the retailer or user may try to blame the government program.

RECOMMENDATION

It is recommended that the Act provide for a nominal inspection and testing program as directed by NIST for all fasteners. This requirement should be

imposed on all fasteners presently in the distribution system but are outside the periphery of this program as well as for all fasteners received with certification.

5. The Act specified what action must be taken by anyone who alters a fastener thereby rendering it nonconforming to the description in the relevant specification and offers same for sale. It does not address any controls over the user who buys fully certified fasteners and alters them for such reasons as meeting schedules, etc.

RECOMMENDATION

It is recommended that the Act require the user to also retest any altered fasteners and to include a copy of the acceptable test report with the laboratory certification which was provided with the original certification.

6. The Act does not provide for acceptance of fasteners which do not meet every requirement of the applicable specification or standard when the condition of the rejected characteristic is so minor that it would not effect the use for which it was intended.

RECOMMENDATION

It is recommended that provisions be made for acceptance of fasteners which may have a minor defect but which does not impact on the intended use. Requests for such waivers should be forwarded to NIST for approval and for record purposes.

7. Several existing specifications and standards presently require identification of grade and manufacturer and impose specific inspection and test requirements. Many of the former parallel the requirements of this act. Although great attention is being given to assure that the manufacturer or distributor is tightly controlled, little or no emphasis is placed on the retailer or user for insuring that he knows what he is buying and from whom. Most retailers and users buy from the lowest bidder without ample concern for the quality of the process used to produce the fasteners. This Act, as written will surely help to control the flow of substandard fasteners into the distribution system. However, if we are to assure that substandard fasteners stay out of the market place, we must place more responsibility on the retailer and user and require that the retailer or user accept the responsibility for assuring that the manufacturer or distributor supplying the fasteners has an acceptable production process and does the necessary inspection and testing to assure compliance with the requirements of the contract or purchase order. Understandably, this will require additional effort on the part of the retailer or user through plant visits and receipt inspection. Had this requirement been in place prior to the influx of defective and counterfeit fasteners, the problem would have been minimized. If nothing is done to certify the fasteners presently in the distribution system, the defective or counterfeit fasteners will contaminate the distribution system for years to come.

Mr. Chairman and Members of the Committee, Mr. Brown and I would like to once again thank you for this opportunity to present our views on this vital piece of legislation. This is a program which must go forward not only for the sake of national defense but for our entire industrial complex.

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